Understanding Arguments: The SIMPLE Model

G.G. Bolich, Ph.D.

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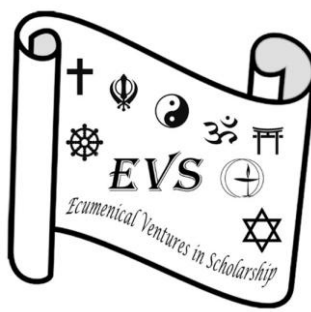

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Apollonius of Tyre relates, "As Crates took him by his cloak to drag him from Stilpo, Zeno said, 'Crates, *if you intend to grab a philosopher do it by the ears!* Persuasion is certainly the way to draw one, yet if you forcibly drag me away, my body will be with you, but my soul will remain at Stilpo.'"

(Diogenes Laertius, *Lives of Eminent Philosophers: Zeno,* VII.24)

"Come now, let us reason together. . . ."

(Isaiah 1:18)

Cover : selection from Raphael's fresco "The School of Athens," painted between 1509-1511.

About the Author

The first chapter of this book discusses the evaluation of sources and it is only fair to provide some information that may be judged relevant in assessing the credibility of the author as a source with respect to the matter of understanding arguments. With that in mind, I submit the following:

With respect to my "expertise," the topic of arguments is generally addressed professionally by philosophers and psychologists, though educators and a great many others have important stakes in the matter. Professionals are typically assessed by educational attainment and production. My education includes six earned degrees, five of them at the graduate level, including two earned doctorates. As an undergraduate majoring in Philosophy my special interest was epistemology, the study of how we know and the question of truth. That interest has proved to be lifelong and I have written various books on knowledge, and especially its relation to belief: *Honest Belief, Credible Faith*; *Knowledge & Belief*; *Knowledge & Belief Illustrated*; and *Knowledge: An Illustrated History*. With a special interest in ancient Greek and Hellenistic philosophy, I have extensively read these ancient authors in their native tongue and the translations I use are generally my own. In addition to Philosophy, the field of Psychology devotes attention to the subject of argument. My second doctorate is in Psychology and over decades as a university teacher I taught many courses where critical thinking and argumentation were a basic aspect to be taught and practiced.

All this said, I make no claim to be a specialist. This short guidebook instead draws upon my diverse fields of study and practice (philosophy, psychology, and religion) to guide me in my own use of sources to construct and substantiate the SIMPLE Model. I strongly encourage *not* taking my word for anything, but examining my sources and many others to forge an independent and informed view on this important and useful matter of understanding arguments.

Introduction

The SIMPLE Model

The word "argument" commonly conjures up a particular way of conversing, one in which people in disagreement engage a topic. They might do so in a formal debate or merely a shouting match, but what makes it an argument is the element of *disagreement*.

Despite this popular conception there is a long tradition of thinking that looks at argument differently. This other point of view—which is what we shall adopt here—considers an argument as a *chain of reasoning presented to advance some claim*. We are all acquainted with this use of the term because arguments in this sense are a frequent part of our experience. Such arguments do not require disagreement; they might win universal or at least majority assent. But they remain arguments in that they set out reasons in support of some conclusion.[1]

The present volume offers a short and practical way to approach arguments—both in reading them and, by extension, in forming them to present to others. Here our focus is on evaluating the arguments of others, with a presumption that by so understanding that matter a person will be better able to mount effective arguments of his or her own making.

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[1] Fearnside, *About Thinking*, 4, succinctly defines an "argument" as "*reasoning alleged to support a conclusion*" and differentiates this from the popular sense of disagreement, calling the latter "disputes." In Aristotelian terms, arguments are propositions put to problems.

Of course, there are any number of ways one might choose to evaluate an argument and I make no claim that this is the best one. It is simply an easy way to get started in the valuable practice of thinking critically about arguments, which has the benefit of helping a person to avoid falling prey to poor arguments while also deepening an appreciation for strong arguments. This book, after presenting the SIMPLE model in overview here, aims to aid remembering key elements by discussing in a little more detail each element.

Here is the model at a glance:

- **S**ource: how credible is the source presenting this argument?
- **I**ntention: what does this argument intend?
- **M**essages: what messages is the content sending by its information and meaning?
- **P**ersuasiveness: how persuaded am I that the argument is true (or at least plausible)?
- **L**ogic: what is the form of the argument?
- **E**motion: what feelings are stirred and how should they be evaluated?

Please note that this model presents six *elements* of evaluation rather than sequential steps. In any given situation a person might start with one or another of these. Still, it seems likely that in common practice the first three elements tend to be prioritized at the start—at least when the argument being considered has not roused strong feelings. In the latter case the last element is likely to be the first engaged. It seems prudent to let each individual argument indicate where it might be best to start.

Shall we begin looking at each element?

Chapter 1

Source
(Assessing Credibility)

Psychologist Earl Carlson maintains that, "All persons depend on others for almost all of the important information that they learn and use in reasoning."[2] Regardless of whether we fully agree with such a declaration, we probably concur that people do use and often rely upon others—"sources"—for the information and reasons (i.e., their arguments) they put forth. If so, it is prudent to consider such sources.

Thus a sensible first step in considering any argument is to look at the matter of *source*. As a familiar old saying puts it, "Garbage in, garbage out"—we are all dependent on the value of the sources we use. There are two uses of the word "source" relevant to our examination of the term here:

- Source as the *point of origin of an argument*; and,
- Source(s) behind the primary source: the *points of derived origin for information used by an argument*.

When we encounter an argument we find it in some package, a unity we identify as its "source" in terms of being the perceived point of origin for the argument. But inspection of this primary source generally reveals the existence of other sources—those the

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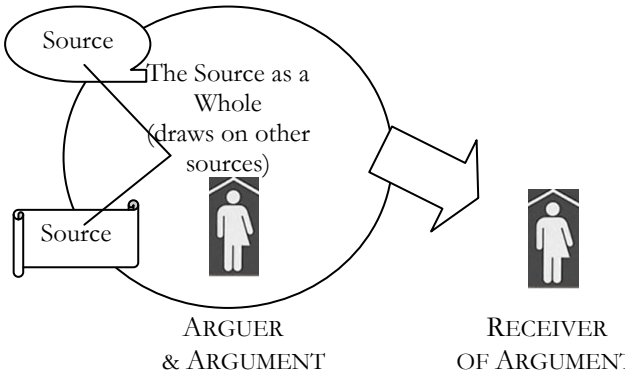
[2] Carlson, "Evaluating the Credibility of Sources," 39.

argument itself is drawing upon. These "sources behind the source" (e.g., quotes or information from texts) need also to be assessed as best one can.

We can picture the matter this way:



Our first use of the word "source" is broader. It is the sense of the term we were likely taught in school when told to identify the book or journal that information came from. It is also what was meant when our parents, upon hearing some dubious idea or claim we repeated to them from someone else would wryly tell us, "Well, consider the source." In such instances our aim is to identify where an argument originates (e.g., media, writing, or person), as far as it is known to us.

But sources typically use at least some other sources drawn from elsewhere. A thinker like the ancient philosopher Epicurus might proclaim he was self-taught and completely independent in his thinking,[3] but

[3] For this audacious claim, see Diogenes Laertius, *Lives of Eminent Philosophers: Epicurus,* X.13 (cf. X.26); his chief biographer in antiqui-

his claim does not hold up, and few among us would have the *chutzpah* to make a similar boast. Most arguments quite obviously draw upon reasons and/or evidence derived at least in part from other sources. So while we start with identifying the source as where the argument as a whole is found, we also are wise to consider where the argument draws its information from.

Assessing Sources

In either instance, whether considering the primary source—the argument as we have it—or the sources drawn by it from other sources, we tend to make our assessments along the same lines. So pointing out that we should keep in mind a double sense of the word "source" does not too much complicate things because we are likely to apply the same standards each time. But it remains a worthwhile distinction to maintain because it keeps us mindful that sources do not exist in a vacuum or suddenly appear from nothing.

Now, the way we actually and ordinarily evaluate sources may prove not to be the optimal way, but it serves as an honest place to start. Source credibility is often judged by people based on factors like these[4]:

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ty, Diogenes Laertius, X.2–8, 12–14 says otherwise and offers his evidence of Epicurus' use of sources.

[4] Some of the following factors are discussed in materials such as Sharrer, Stadtler, and Bromme, "Judging Scientific Information"; Ismagilova et al., "The Effects of Characteristics of Source Credibility on Consumer Behaviour"; and, Kim and Dennis, "Says Who?" The list here was chosen because these articles probe different contexts in which arguments frequently appear: scientific presentations, consumer marketing, and social media. The factors listed here might be profitably compared to the elements of persuasion discussed in chapter 4.

- *Expertise*—we tend to search for indications that the source is "in a position to know," or is an expert, or is backed by an authority.
- *Homophily*—similarity between ourselves and the source person—makes it more likely we will find the source credible.
- *Peer Review*—we generally trust as credible sources sanctioned by others whom we trust, whether our own peers, or peers of the source whom we already trust. (The idea of peer review is relied upon in academia in guiding student selection of articles from journals.)
- *Trustworthiness*—our personal judgment (whether based on reasons or feelings) that a source can be trusted influences how credible we find it. Unconscious homophily plays a role, but this consciously relates to factors like expertise and *reputation* (e.g., as being generally credible in other matters), and even more basically comes to a sense of how *honest* the source seems to be. This is a very subjective measure.

All of the above are factors typically involved in assessing the credibility of sources—and all have some value. But it doesn't take much imagination to see that some or all of them might lead us astray. For example, Carlson points out that when it comes to appealing to authority, or expertise, a basic problem is that for any given matter there are likely competing authorities or diverging experts. Thus we find ourselves having to sort them out. He recommends that in doing so the focus might better turn to evaluating the *process* used by competing experts. The more reliable and valid the process, the more likely the authority can be trusted

when compared to rivals using less reliable and less valid methods.[5]

Homophily—our similarity to the arguer—largely influences us at an unconscious level. By and large, people exercise a very conservative approach to differences, holding them at arm's length until it can be determined how safe they are. This is a sound survival strategy across a wide number of things we encounter. But the downside is that it tends to make us resistant to diversity, including "foreign" perspectives (i.e., anything different from what we already hold). The more someone is like us, the safer they are likely to appear to us, and thus the easier it is to trust them. Our normal guardedness against what is different is dropped. With respect to arguments we encounter the risk that rather than critically assess an argument on its merits we simply embrace it because the source is like us—safe.

Peers—whether professional or personal—pose this risk of homophily, but other risks as well. For example, they might be guilty of "group think" such that the bunch of them are trapped in a narrow, closed viewpoint and thus miss what may be the most relevant information. As the ancient skeptic Sextus Empiricus noted many centuries ago, even when a great number of people agree, they are only voicing *one* position![6]

Finally, while we tend to trust others we judge to be like ourselves, who seem honest, this entails very subjective assessments. They are easily likely to prove

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[5] Carlson, "Evaluating the Credibility of Sources," 39–40. This is a principal reason philosophers in evaluating arguments turn to logic and focus on the form (the process) of the argument.

[6] Sextus Empiricus, *Against the Dogmatists: Against the Logicians,* I.317–335.

short-sighted and unduly self-serving. So while we should not simply set them aside, we might do well to acknowledge the risks in the ordinary way we evaluate sources and at least supplement the above factors with others such as:

- *Explicit evidence*—to what extent is the source supported by specific facts (not *claims* of otherwise unnamed facts, but *actual* facts)?
- *Openness*—to what extent is the source open to facts or ideas that do not support its argument, or to the possibility of alternative explanations, or to the likelihood of future revision?
- *Reliable processes*—to what extent is the source based on processes that can be reproduced to see if they continue to hold up under further scrutiny and/or testing?
- *Valid methods*—to what extent is the method of reasoning, or collecting facts, or organizing and presenting information, or otherwise setting out some way backing up its claims one backed by reputable others as being valid (i.e., *sound*).

Throughout this volume we will be wrestling with one or another issue related to an argument's source. All the elements of the SIMPLE Model are closely interrelated. This first chapter might well be considered a broad way of initially approaching an argument by both identifying *where* it appears to us (its point of origin), and also *where* its roots appear to be (the sources behind the source).

Having captured a basic sense of the source of an argument, and its sources, we can next turn to considering *why* the argument exists. What is its intent?

Chapter 2

Intention (Types of Arguments)

Why an argument exists is what here is considered its intent or intention. When we have in mind some formal aim, typically characterized by careful deliberation, as in a legal argument, we best use the word *intent*. But most arguments are less formal and merely express some *intention*—some aim or object of achievement. In either case, the why of an argument provides a way to identify it as a certain type, which can be useful for understanding it and for judging its success.

However, there are a variety of other ways to categorize arguments. Each way has factors commending it and all can contribute to attaining a better understanding of arguments. Later in this volume we shall examine the matter of an argument's form, which is yet another way to categorize arguments. Here we will briefly look at three ways of categorizing them—and favor one.

I. *Basic Process*

A basic way to categorize arguments is to distinguish them by whether the process used to derive statements and yield a conclusion starts with and relies upon the *evidence* of the human senses, or starts with and relies upon *reason*. Thus we have these types:

1. *Inductive* (bottom-up), and
2. *Deductive* (top-down).

The former is most associated with the empirical model such as found in science where a large number of observations and/or experiments yield a general conclusion. The latter is most associated with philosophical rationalism. The basic process is a matter we shall return to when we consider the form of an argument.

II. *Content*

A second way to categorize types of arguments is by their *content*. By this is not meant the specific content of each individual argument, but rather the general nature of what different kinds of arguments focus upon as content. In this respect we might distinguish these types[7]:

1. *Analogical*—the content concerns comparisons.
2. *Categorical*—the content concerns conclusions about membership in a collection or group sharing certain characteristics.
3. *Causal*—the content concerns cause-effect reasoning.
4. *Moral*—the content concerns reason or evidence driving toward a conclusion that something or someone is morally good or bad.
5. *Propositional*—the content concerns statements that propose something—typically an assertion that something is true or false.
6. *Statistical*—the content concerns the use of numbers utilizing some recognized form of statistics to derive and/or support a conclusion.

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[7] The content types listed here are adapted from Rainbolt and Dwyer, *Critical Thinking*, chapters 5–10.

These content types can be coordinated with the process types, as follows:

Inductive	*Deductive*
Analogical	Categorical
Causal	Moral (some)
Moral (some)	Propositional
Statistical	

Moral arguments can be either inductive or deductive.

Philosophers George Rainbolt and Sandra Dwyer observe, "Propositional logic is the logic of relationships *between* statements. Categorical logic is the logic of relations *within* statements."[8] Note that the content alone does not determine whether the type is formally logical or not, which is another reason why we shall have to give further attention to argument form later.

III. *Intent/Intention*

In this volume we categorize arguments by a time-honored method: *basic aim*. Aristotle, in his book *Topica* (*Topics*), describes three kinds of reasoning arguments.[9] His presentation provides us a sensible place to start inasmuch as Aristotle is commonly regarded as the father of logical reasoning and his writing on the subject of argumentation and the role of logic shaped a long tradition of thinking on our subject. His three types are:

1. Demonstrative.
2. Dialectical.
3. Contentious.

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[8] Rainbolt and Dwyer, *Critical Thinking*, 186.

[9] Aristotle, *Topics*, 100b–101a [I.1]; 105b [I.14]; on the latter, see Forster's translation, 307. For a brief summary see Bolich, *Knowledge*, 69–73.

These are ranked according to the general regard held for each kind, with demonstrative earning the highest rank. Interestingly, the intention of each type also has strong influence on the form it takes. Remember, we are using the word "argument" in the broad sense of *a chain of reasoning presented to advance some claim.*

Demonstrative Arguments

Among arguments the first in rank is scientific argument, with the intention of providing a *demonstration*. In other words, the chain of reasoning advances a claim that some specific case or object belongs to some general concept or category. The demonstration begins with some accepted general idea or principle, one typically derived from either a previous demonstration, or a foundation of extensive observation and testing (as in science). Using deductive logic such arguments demonstrate a previously unknown truth, which is the sound conclusion of a chain of reasoning built upon accepted premises. In other words, demonstrative arguments start from a pre-existing answer—a general and accepted given. The aim is establishing a rationale for why a particular thing belongs where we have put it under a general and accepted given—what *causes* our determination.[10] Put simply, demonstration yields an explanation that justifies placing a particular thing in relation to a

[10] Traditionally, four causes are named: *material* (i.e., the actual physical properties that make up a thing and also make it different from other things); *formal* (i.e., the 'form' discerned in the particular substance; its observable structure or pattern); *efficient* (i.e., the agent behind the thing's existence); and *teleological* or *final* (i.e., the *telos*—ultimate purpose or end—toward which a thing moves).

general concept (e.g., calling Fido a dog). The explanation is *knowledge* and requires no effort at persuasion.

Dialectical Arguments

Dialectical arguments—the kind of argument Plato's Socrates made famous—use a different kind of chain of reasoning. Its chain intends through a process of inquiry and interrogation to arrive at some logical conclusion—a reasonable and warranted position.[11] This kind of argument requires some persuasion (considered in chapter 4) because it is about *beliefs* rather than knowledge. Lacking the certainty of knowledge the goal of such arguments is to establish the most reasonable belief. Unlike demonstrative arguments, dialectical ones start from questions rather than answers. By using inquiry and interrogation the argument investigates likenesses and differences, and may carefully form definitions, but everything is aimed at forging a chain of reasoning that *must* yield a particular conclusion if done correctly. Thus the form of the argument is crucial (and will be examined closely in chapter 5 on logic). Dialectical arguments can be either inductive or deductive.

Contentious Arguments

Contentious arguments have less predictable chains of reasoning. They not only rely on persuasion, but intend it. They start from what *seems* at first to be generally accepted but upon examination shows that it isn't. Because the matter isn't certain and in fact is dubious, it can be debated. Because it can be debated persuasion is in play as each party contends to establish its

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[11] Aristotle, *Topics*, 100b, has in mind for dialectical arguments starting from *endoxa*, "widely endorsed beliefs."

own position as the most plausible. Contentious arguments are inherently less stable in form and in their conclusions than the other two kinds. Rather than rely on the kinds of chains of reasoning characteristic of formal logic they rely on one or another kind of presumption.[12]

Argument Types by Intention: Summary

Demonstrative ⟶ **Knowledge**

Intention—demonstrate the rational necessity of a conclusion.

Conclusion: a particular *x* belongs within a general *y*.

General Premise — Supporting reasons/ evidence of facts & definitions

(Beginning with an answer, each link is logically connected.)

Dialectical ⟶ **Reasonable Belief**

Intention—reason the rational necessity of one possible conclusion among a range of alternatives.

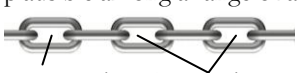
Conclusion: a particular *y* must follow when *x* is granted.

Question — Supporting reasons/ evidence related to likenesses & differences

(Beginning with a question, each link is logically connected.)

Contentious ⟶ **Dubious Belief**

Intention—contend for one possible conclusion as the most plausible among a range of alternatives.



Conclusion: given the presumption *x*, then *y* is plausible.

Presumption — Supporting reasons/ evidence related to plausible claims

(Beginning with a presumption, links appeal to plausibility.)

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[12] On the three kinds, see Aristotle, *Topics* (*Topica*), 100b–101a [I.1], and context.

The difference between dialectical and contentious arguments—the kind of arguments that generate disagreements—will become clearer when we consider the matter of argument form in chapter 5.

Although these ways of classifying arguments into types provides a convenient framework for grasping both intention and form of arguments, we all know the actual matter is rarely so simple. The broad matter of an arguer's intention still must be presented and that presentation is shaped by more than the arguer's avowed intention. Matters of setting and audience, as well as the content which the argument is about, all shape that presentation. Thus law professor Stanley Fish warns us against thinking of arguments as following some general strategy because every argument is about something *specific* and that specific something is in a context that determines whether any given strategy will be relevant and/or successful.[13]

Argument Intention & Content

As the above suggests, as important as an arguer's intention may be, and as useful as distinguishing arguments by intention might prove, what we have done by such work remains limited—perhaps frustratingly so. Intention is just one link. Presumably, an arguer's intention shapes the form of the argument and determines its content as well. However, we know, as the poet says, "The best laid plans of mice and men oft go astray." Not all arguments display skill in matching intention and presentation. There are reasons we speak of some arguments as strong and others as weak.

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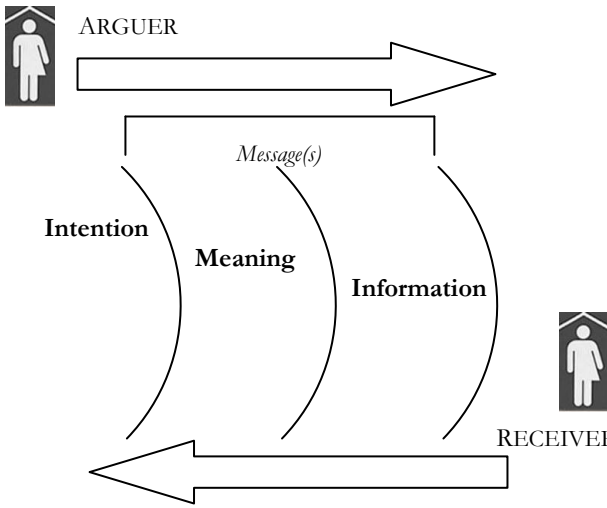
[13] Fish, *Winning Arguments*, 7.

Still, as a general rule we can presume that intention generates an argument's messages (its content). Together, messages and intention in the process of an argument may be pictured like this:



The arguer starts with an *intention* and forms a message (or messages). That message has both *meaning* and *information*. The receiver of the argument starts with the information: it is what is most readily evident at the surface of the argument. The receiver then seeks the meaning of the message. When both information and meaning together have yielded the message(s) the arguer's intent can be discerned.

We are now ready to proceed to issues related to understanding an argument's content, which provides the message or messages the arguer is sending.

Chapter 3

Messages (Analysis of Argument Content)

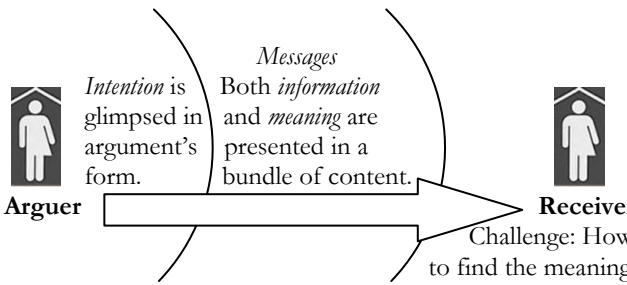
No matter what an arguer intends, it is the argument as actually presented that others receive. This presentation has *form*, which we shall examine at length in chapter 5, but it is its *substance* that we shall focus on here. It hardly seems an exaggeration to declare that what most people are interested in most of the time is an argument's message in order to discern and understand its *meaning*. An argument may set out more than one message, and so figuring out this aspect of an argument entails analyzing argument content.

Put simply, by "messages" we mean a communication with two kinds of content:

1. *Information*—the content as it appears in the source and its argument(s), with its
   a. reasons,
   b. evidence, and/or
   c. emotional matter.
2. *Meaning*—the purpose, and/or significance of the content, which includes both
   a. Denotations—the literal or 'dictionary definition' sense of terms and concepts, and,
   b. Connotations—the additional implications attached to denotations.

Every message has both information and meaning.

What a receiver wants most is to understand the meaning of the message; the information may be interesting and even vital, but it is the meaning of the message that matters most. However, getting at meaning can be difficult because it is bound up with the accompanying information. It is also complicated by the arguer's intention. So a first step is to reimagine the illustration at the end of the last chapter to display what the receiver of an argument faces:

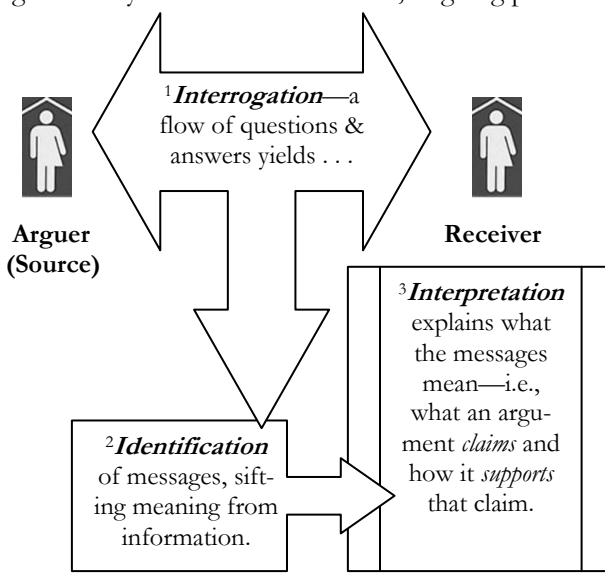


Remembering that an argument is a chain of reasoning presented to advance some claim, the receiver's task is to recognize that chain, seeing its individual links as well as grasping how they are linked together. The form of the argument—its shape in presentation—helps disclose its intention (demonstrative, dialectical, or contentious). But this shape is inseparable from the argument's substance—its content with messages filled with meaning bound up with information. All too infrequently does an arguer make it simple and obvious how information and meaning fit together, what the claim is, and how the chain of reasoning is to be seen and understood. All this then becomes the receiver's task.

So how does a receiver get at the substance? What must a receiver do in unraveling an argument's message, or messages? For our purposes, we may envision getting at the content of an argument as generally involving three broad processes:

1. *Interrogation*—the receiver of an argument puts questions to the argument (and thus to the arguer).
2. *Identification*—the receiver, based on answers from interrogation, distills the meaning from the surrounding information.
3. *Interpretation*—the receiver continues interrogation to clarify, and ultimately explain, what the argument means—and then judge it.

Together they look like one seamless, ongoing process:



1. *Interrogation*

It is probably evident by now that there is some ambiguity inherent in wrestling with sources and sometimes in discerning an arguer's intention. We are unlikely to know everything we want to know in order to feel highly confident in understanding any given argument. What, then, should we do?

Ask questions. Critical thinking experts Linda Elder and Richard Paul recommend focusing on the type of reasoning required by a question to help determine what kind to ask.[14] This yields three types of questions:

1. *One system questions* are those with an established procedure (or method) for determining an answer. These include those questions settled by:
   a. *definition*, and/or
   b. *facts*.
   Such questions are objective in nature.
2. *No system questions* are subjective in nature; there exists no objectively correct answer and so any answer is basically a matter of choice and preference (e.g., "Do you like coffee?")
3. *Conflicting system questions* are questions of *judgment* in which a choice is made among competing possibilities. Answers are best gained by assessing:
   a. *clarity* (key to accurate comprehension);
   b. *evidence* (key to use of information);
   c. *reasoning* (key to logic); and
   d. *relevance* (key to practical application).
   The goal is the *best* answer, not the *right* one.

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[14] Elder and Paul, *Asking Essential Questions*, 9. The list is based on their material.

Depending on an argument's presentation one or more of these question types may prove best. Let's see how these might ideally fit our types of arguments:

Demonstrative	**Dialectical**	**Contentious**
One system	*Conflicting system*	*No system*
Why? Demonstrative arguments depend on facts and definitions.	Why? Dialectical arguments ask questions requiring judgments about likenesses and differences.	Why? Contentious arguments rely on presumptions and subjective preferences rather than evidence or reasons.

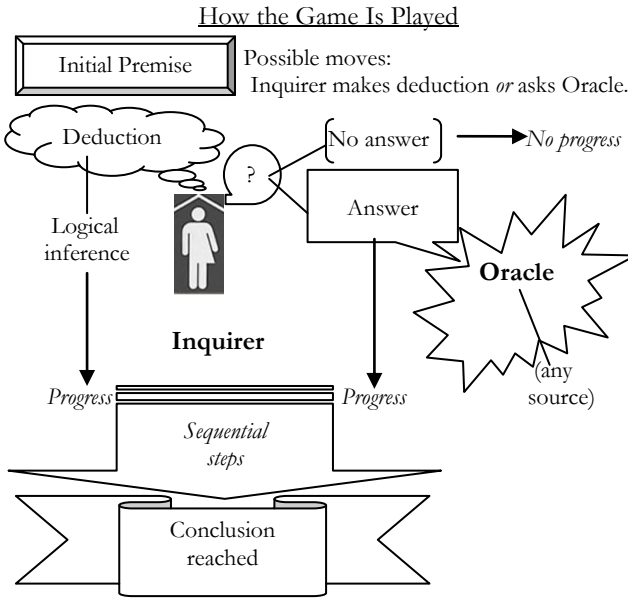
Please try not to press the above very much. As we saw in looking at the types of arguments they can share some similar interests, as do demonstrative and dialectical ones in both relying on close reasoning to compel a specific conclusion as logically necessary. Dialectical and contentious arguments both rely on being able to persuade. Therefore, we must be wary of simply assuming a particular type of argument can only be served by one type of question.

Interrogating Sources . . . the Game

It may be more useful to proceed to what can be done with questions, regardless of the kind used. In that respect, the renowned logician Jaakko Hintikka in developing what he calls an "interrogative model of inquiry" puts asking questions into a Socratic process.

He invites us to understand this process in its simplest form as a game in which there are two players, an *inquirer* (an individual or team) and an *oracle* (a source of information). The source provides the starting point: some premise (basic argument statement). The inquirer then 'plays' by making one of two moves: drawing a logical inference from the premise, or putting a ques-

tion to the oracle. A game is won when a conclusion is reached.[15] In the game of understanding an argument the goal is threefold: identifying the argument's claim, discerning its chain of reasoning, and judging whether the chain of reasoning supports the claim adequately.



Progress is made through *ampliative reasoning*.[16] Such reasoning proceeds from questions to answers—specifically, questions put to sources that yield new hypotheses. Such answers aren't certain, but they offer a

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[15] Hintikka, "Knowledge-Seeking by Questioning," 483–84.

[16] Ampliative reasoning concerns inference, where an extension of knowledge occurs according to rules as a new conclusion is based on previous ones and adds knowledge.

way to keep on reasoning. What is most applicable to us is that this means we choose to engage with any given argument as a potential source for new knowledge. In a nutshell, this is a learning game: *we interrogate sources that present arguments in order to gain new knowledge.*

Hintikka points out that the questions we use in interrogating argument sources are often *tacit.*[17] That means they are questions we do not ask consciously. Many people contemptuously dismiss any notion of the unconscious but we need not contend for a full blown theory of the unconscious mind in order to recognize that at any given time some of what we know and some of what we do is outside our immediate awareness. The kind of knowledge we bring with us that at any given moment is unconscious is called tacit knowledge. Just as we bring tacit knowledge with us to the arguments we encounter, so we bring tacit, or if one prefers, *implicit* questions—natural queries automatically raised when people encounter new and novel situations. This kind of questioning is automatic—reflexive—and advantageous for survival, so it long ago became part of human nature and was extended to many things where actual survival is not at stake.

But we are advantaged in understanding arguments if we can elevate our questioning to consciousness. This book has been doing just that. Identifying a source, we saw, is asking *where* an argument is found and where its roots lie in other sources. Identifying an intention, we learned, is asking *why* an argument is put forward. In playing the game of interrogating a source ("Oracle"), we ask the above questions and others as well.

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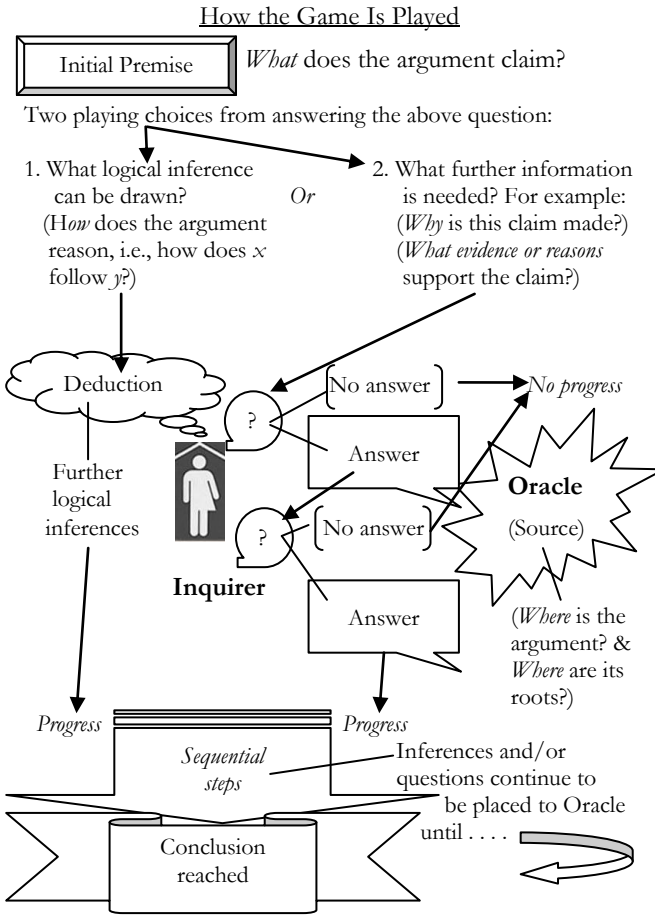
[17] Hintikka, "What Is Abduction?", 519.

If we return to the game described above, we note it begins with some premise—the basic argument statement that first roused our attention. Let us then redraw our picture of the game and play it out with some explicit questions.



Note that even deductively making inferences entails asking implicit questions that one can make explicit.

Interrogation: Basic Question Set

Interrogation is basic to both identification and interpretation. In fact, the entire process can be (simplistically) reduced to a set of basic questions, some of them relatively in the background with respect to the argument's content, and some directly about the content.

First are the background-to-content questions:

1. *Where* is the argument found? (Primary Source)
2. *Where* are the sources roots found? (Sources)
3. *Why* is the argument advanced? (Intention)

(The first question often is better framed as "*Who* is the arguer?" if we are dealing directly with a person and not a document or website or other kind of source.)

Next are the content-direct questions:

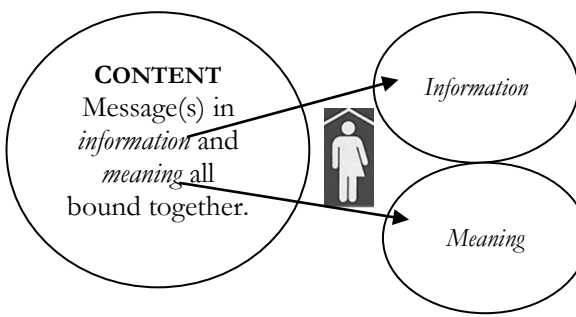
1. *What* is the claim advanced? (Argument thesis)
2. *How* is the claim presented? (Argument form)
3. *Does the presentation support the claim?*

The argument's most basic statement is its claim, which serves as a "thesis" but is put forward as a "conclusion." In other words, an argument states as a conclusion the claim it wants to advance, which is its *thesis* in the classical definition of that term as whatever is being put forward as a matter maintained or proved by the arguer. The process of supporting the claim is the chain of reasoning of the argument—its *form*. In this form can be glimpsed the intention, but the manifest content is the information (reasons, evidence) supplied. The crucial third question asks if the claim is supported.

2. *Identification*

We have spent some time with interrogation because asking questions, receiving answers, and asking more questions is basic to dealing with arguments. It might be evident, too, that this process is most at home with the dialectical argument, among the more common kinds of argument, at least where *reasonable* discourse is at play. In dialectical arguments the intention begins with questioning some belief widely endorsed, or at least held by those highly esteemed, and aims to test it. But regardless of the kind of argument, interrogation is a fitting starting point.

The answers received in interrogation are used in our second step: identification. This step can be pictured as follows:



The receiver, through interrogation, receives answers that aids in identification, the step of separating information from meaning so that the latter is clear.

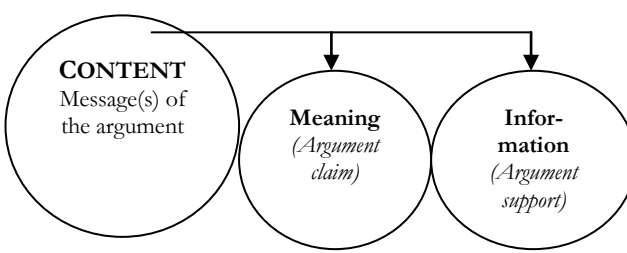
Hopefully, the above picture will raise at least some mild alarm. Content is holistic in nature and separating information from meaning is highly artificial. It may help to keep what we are doing in the context of a game. In this case, *the meaning is the claim* put forth by

the argument and *the information is the support for the claim*. In other words, what an argument means is primarily expressed in its claim—which, remember, is its thesis. The information in front of, behind, or all around the claim is offered in support of it.

It is true that when we talk about "meaning" this way we are using a narrow and specific sense. But it is at the heart of what we usually have in mind, because when we speak of meaning we typically are thinking about what something purports, or claims, to be the case. Meaning is what one intends and to the extent it is adequately presented it is what is achieved.

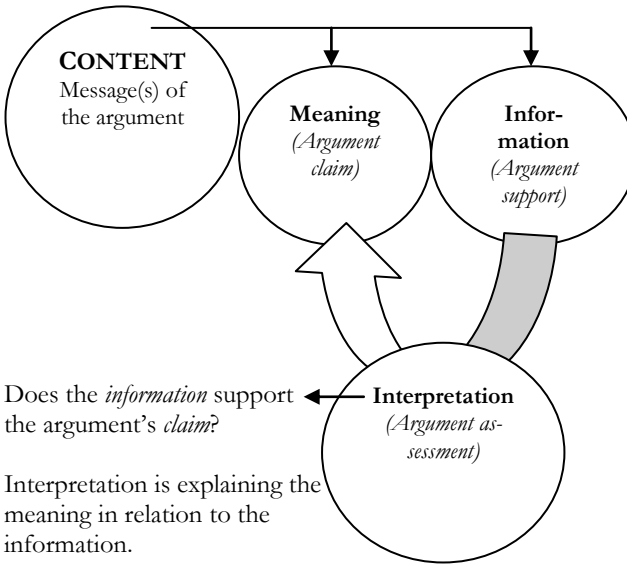
"Information" has a dual sense. On the one hand, it contains reasons, evidence (e.g., facts), and even emotions *about* something—ideally, about the claim. On the other hand, it is the *arrangement* of these reasons, evidence, and so forth—the form that constitutes the chain of reasoning to which the claim is supposedly tied.

Simply put, the step of identification uses interrogation to sift through the information to get as clearly as possible at the claim. The content-direct questions posed above are central to this step. When done right we end up with this picture:



3. *Interpretation*

Interpretation, still employing interrogation as needed, builds immediately upon identification. We can show that by adding to the previous picture:



The receiver's ultimate goal in wrestling with any argument is to understand it so as to fairly judge it and thus decide whether to support it or not.

The understanding of the argument requires asking relevant questions appropriately and using the answers adroitly. The answers concern the argument message(s). Any message is the communication of both information and meaning. Figuring out what in the content is the claim (meaning) and what supports it (the information) then allows enough understanding to interpret

it—judge it as reasonable or unreasonable, true or false, worth supporting or needing opposing.

Arguments are chains of reasoning to advance a claim and it is both right and the duty of every receiver to assess the claim and its chain of reasoning in order to decide whether the argument merits support. In the case of demonstrative arguments the chain compels acceptance as necessarily true and represents knowledge. With dialectical arguments the chain also aims to compel acceptance through links supporting a claim as probably true, a matter of belief worth widespread endorsement, or at least endorsement by the wisest of folk. With contentious arguments the chain hopes to persuade acceptance based on plausible presumptions and so win the receiver's belief in what remains a dubious or uncertain situation.

Interpretation is the culmination of a process whereby interrogation and identification lead to enough understanding to say, "*This* is the claim, and *that* is its support, and I find it *does* (or *does not*) hold together as a chain of reasoning." Interpretation is always subjective—a personal judgment—but following the SIMPLE model helps make it more objectively secure. Still, there are at least two very basic issues always complicating interpretation.

Two Basic Issues

Philosopher Terrence Parsons points out, "In assessing an argumentative text there are two steps: you interpret the text, and you assess the argument that you have attributed to the text as a result of interpreta-

tion."[18] Put simply, he says we first *interpret* and then *judge*. (For our purposes we have put both together under the label of interpretation, but if one prefers to separate them it makes no difference to our basic procedure.)

With respect to interpretation there are two basic factors that we do well to keep in mind:

- *Background*—every arguer and every receiver of the argument comes to it with abundant experiences, beliefs, and knowledge that is often applied to interpreting an argument.
- *Context*—every argument appears in a setting, or better, settings and such inform interpretation.

These two matters are basic and highly relevant to assessing arguments with respect to their sources.

Background

Background is relevant on both sides of an argument.

- The *arguer's background* provides an orientation to a given matter that generates a claim and how it is supported.
- The *receiver's background* provides a framework within which the argument is met with more or less interest and also informs how it is interpreted.

The background of the arguer (i.e., the source) may reveal particular *biases* and indicate whether it is justified to regard the arguer as authoritative on the matter being

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[18] Parsons, "What Is an Argument?", 165.

argued. Of course, even being an acknowledged expert hardly guarantees that an argument will be credible, let alone that it *must* be so. Plato's colleague, the famous rhetorician Isocrates, wisely pointed out, "Those who are 'wise' occasionally miss the practical course to take, whereas occasionally some nobody who is generally looked down upon hits the target as to how to proceed and is judged to have given the best counsel."[19] Nevertheless, we generally find that the background of the arguer is relevant for understanding the perspective and position of the argument.

The background of the receiver often garners too little attention. Each of us brings our own personality, education, experiences, and beliefs to every argument. Sometimes an argument speaks directly to something we know well, or have a lot of experience with, or simply care about deeply. In other cases, our own background may mean there is little interest or investment in an argument, or there is ignorance of the matter being addressed. No matter the argument, though, we cannot escape bringing our background to it. Accordingly, we do well to acknowledge this reality and take it into account when we are interpreting an argument.

Context

Interpretation can be done fairly or unfairly. Fairness means interpreting any argument within its source *context*.[20] Philosophers Jerome Bickenbach and Jackie

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[19] Isocrates, *Panathenaicus,* 248; in Norlin's translation, 525.

[20] In informal logic this is the conversational context. Pinto, *Argument, Inference and Dialectic*, 4, remarks, "One cannot appraise an argument from a position one takes up outside the context of the dialectical interchange on which that argument occurs."

Davies remark, "Reminding ourselves that assessing arguments involves interpretation and sensitivity to context, we make the point that we must evaluate arguments in light of their context and the kind of reasoning they employ in that context."[21] Arguments do not appear in a vacuum; they are embedded in a source.

A very real danger in handling arguments is being unfair to them by ignoring context. This most often is done by *selective cherry-picking*—only presenting or paying attention to those parts of an argument and/or its source that prove some point we want to make. It can be challenging to determine how much of a source to consider, but it seems generally prudent to err on the side of considering too much rather than too little.

When we speak about contexts it can be convenient to distinguish two:

- *Broad*—the context of the whole source:
  - If a person, the body of thought, feeling, and action as much as it is known to us.
  - If not a person, the whole work, whether a document (e.g., website, book, newspaper, magazine, or journal), speech, video broadcast, etc.
- *Local* (or *Immediate*)—the context of a specific part:
  - If a person, the immediate situation (e.g., as an author, a politician giving a speech, a newspaper editor writing an editorial, or a person writing a letter), and the orientation

[21] Bickenbach and Davies, *Good Reasons for Better Arguments*, 143.

of the person to that situation in thought, feeling, and action, at that moment.

- If not a person, the smallest relevant part containing the specific argument being examined (e.g., a paragraph of text).

Neither of these contexts can adequately stand alone. Simply having one or the other is likely to mean overlooking something relevant and important to understanding the argument. Most often the difficulty comes when all we are presented with is the local context. Lacking a larger framework in which to understand it we are likely to go astray. Every local context resides within a broader one. That broader context, considered at its widest reach, includes the arguer's background.

But dealing with a broad context can be very challenging. Let's take the case of a massive philosophical treatise. How practical is it to master the entire source in order to wrestle with a particular argument within it? Or in assessing a person's argument, how likely is it we actually know enough about that person to see a specific argument in the context of the person's whole life so that we can factor in the personal orientation and any biases that might be present?

Inevitably, determining what is relevant as a local context and how best to deal with a broad context resolves down to making decisions, and such decisions are influenced by time and circumstance. Someone with the luxury of being able to read and absorb a large broad context is usually better advantaged in seeing the local context within it. But how often is the ideal the actual case? We usually find ourselves facing a preselected local context with only a little information about

the broad context. In such situations we must simply do the best we can, while recognizing that somewhat prejudices any assessment of the argument.

The following may be helpful:

1. The broadest context is the entire source. The basic goals of the receiver are the following:
    a. *Identify* the source. Who is the person? If a text, in what does it appear (book, etc)? If a web page, on what kind of site (i.e., .com, .org, or .edu)? If a video, produced by whom and released where?
    b. *Rate* the source reputability. This includes all the criteria discussed earlier under accessing sources.
    c. *Consider background* matters such as:
        i. *bias* of the source; and/or,
        ii. *expertise* of the arguer.
2. The local context is the smallest relevant portion of the source containing the argument. It also needs to be identified and its reputability assessed. Relevant issues include:
    a. *Boundaries* of the argument—where it begins and where it ends—should be noted.
    b. *Relation to the whole* source—the broader context—should be remembered.

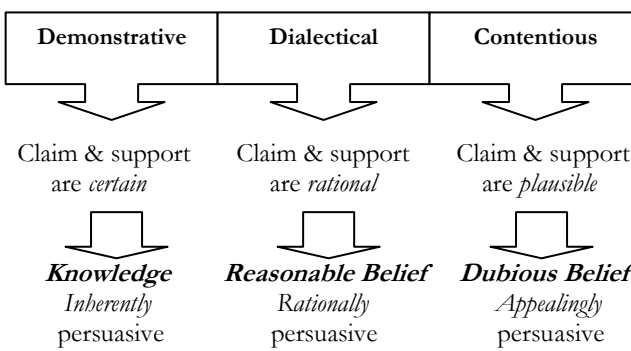
Other relevant contextual factors can be added later.

Even in our SIMPLE Model it is obvious that handling arguments responsibly can be challenging. One of the most significant challenges comes about because of an influential reality: arguments typically aim to persuade us. It is to that reality we must now turn.

Chapter 4

Persuasiveness (Truth Judgments)

Demonstrative arguments assume that the claim and its support are so unquestionable that the truth is self-evident, that knowledge is certain, and thereby the argument is *inherently* persuasive. Dialectical arguments recognize there is some initial doubt at play, that the matter is one of belief rather than knowledge, and that while the belief may be widely endorsed, or at least endorsed by the wisest, it needs to be *rationally* persuasive by mounting a closely reasoned and well-supported case. Contentious arguments, because the matter is dubious, rely strongly on persuasion, aiming to be *appealingly* persuasive by drawing on popular presumptions and presenting a plausible case. It looks like this:



Why does this matter?

Persuasion & Truth

From the very beginning of the history of thoughtful examination of arguments attention has been paid to the role of *persuasion*. There is a very good reason for this: *we tend to join truth and knowledge to persuasion*. Perhaps unconsciously we imagine that when we are persuaded by someone about something it is because we recognize truth in the claim and argument.

We generally hold a high enough view of our own ability to discern truth and to *know* truth when we hear or see it, that we rather confidently conclude that whatever persuades us does so because it is true. Put more bluntly, most of us are confident we possess a strong BS detector so that we aren't fooled by falsehood.

Aristotle recognized that this human tendency creates certain vulnerabilities. These vulnerabilities are often exploited by people skilled in the arts of persuasion. For instance, we often see people believing what appears to us as unbelievable. How can such a thing happen?

In his *Rhetoric* Aristotle writes:

> Another line of thought concerns things supposed to have happened but that are unbelievable, because they could not have been believed if they had not been so, or nearly so. Indeed, this makes them even more likely: for we can take the position that such things happened or likely occurred, because if truly unbelievable or unlikely, they would not be conceded as true; it is not because they are likely and plausible that people think as they do.[22]

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[22] Aristotle, *Rhetoric,* 1400a [II.23.22]; cf. Freese's English translation, 317, and note the context, which offers an example. Unless

People tend not only to have confidence in their own abilities to distinguish truth from falsehood, but to charitably reckon that others who are authorities or experts must be in a better position to know and so their pronouncements can generally be trusted. In fact, precisely at those times when experts or authorities trot out especially convoluted explanations or incredible claims the kind of reasoning Aristotle talked about seems often to kick into gear: No one could make such an outrageous claim *unless* it were true! This has been the secret behind the propagandistic success of big lies throughout history.

Even apart from the dramatic examples we all may conjure up of others—but never ourselves!—falling prey to incredible, unbelievable fantasies, there is a more ordinary experience we all seem vulnerable to in experience. Consider what may happen when listening to a speech, sermon, or television news report, or reading some bestseller, and finding that the argument being presented seems dubious at best—but all around there seems to be widespread assent to it. What ends up being questioned—the source, or oneself?

Similarly, Cicero noted that a confident arguer is especially persuasive. He drew upon his own experience of what he saw often happening when people listening to two sides of a debate are impressed by the first speaker, but then the other speaker replies:

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otherwise noted, all translations are mine. This same reasoning appears in Tertullian, *Treatise on the Incarnation of Christ*, where he writes about the crucifixion and resurrection of Jesus: "It is immediately credible—because it is silly" (*Prosus credibile est, quia ineptum est*), and: "He was buried and rose again: it is certain—because it is impossible" (*et sepultus resurrexit: certum est, quia impossibile*)."

> "For when a listener observes that the person they reckon must be confounded by an adversary's speech instead stands prepared to speak powerfully in reply, that listener most often concludes he has been rash in having assented to the adversary's speech rather than concluding that the new speaker is confident without reason."[23]

The mere fact of an arguer's confidence can persuade a listener that there must be *reason* for that confidence.

Persuasion & Truth

The juxtaposition in this chapter of persuasiveness and truth may seem natural or it may seem odd. Arguments, as chains of reasoning advancing some claim, always at least implicitly are setting forth that claim as "certainly true," "most likely true," "probably true," or at least "plausibly true." Dialectical and contentious arguments rely on persuasion because their claims are not immediately, self-evidently true and so the receiver of the argument must be convinced somehow. The effort to persuade, then, is touted as being in the service of the truth of the argument.

Receivers of arguments want truth; we want to decide accurately whether a claim is true or false, even if the best we can do ultimately is conclude how plausible it might be. To the degree we are confident in our ability to discern truth, when we are persuaded we judge it is because we have recognized the truth that is there.

Here is the dilemma with every argument: truth is itself very persuasive, so being persuaded seems to indicate truth is present, yet we grasp that people are also

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[23] Cicero, *On Rhetorical Invention* (*De inventione*), I.17 [§25]. See the context (and Latin text) in Hubbell's translation, 49–51.

persuaded by lies. Philosopher Dale Jacquette, reflecting on Socrates' grappling with this dilemma even when on trial for his life, remarks, "The problem posed by Socrates back in 350 BCE can be described in these terms: Is a good argument one that effectively persuades an audience regardless of its truth, or one that logically entails true conclusions, regardless of its persuasiveness or lack thereof?"[24]

Socrates' solution seems to be that the best of all arguments join truth to rhetorical persuasiveness, but that when persuasive rhetoric is at odds with truth, one must prefer truth. The problem that Socrates recognized and that has been wrestled with by philosophers and others for a very long time is this: truth by itself—relying on reason and evidence—may not be as persuasive as an emotionally compelling lie. The traditional distrust of emotion by most philosophers is well-earned.[25]

In philosophy there is a long and firm tradition about how to resolve the dilemma described above. *A (morally) good argument is one that prioritizes truth and chains persuasion to the powers of formal logical reasoning.* Of course, this solution is widely ignored. A good many people only care about "winning" an argument, by which they mean persuading others that their claim should be supported regardless of its actual truth.

Because of this reality sensible people who still prioritize truth have to safeguard themselves against the seductions of persuasion apart from truth. Though this is easier said than done, there is a place to start.

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[24] Jacquette, "Socrates on Truth," 1.

[25] We can never quite escape the power of feelings or the rushing movement of emotion, which is why we discuss both in chapter 6.

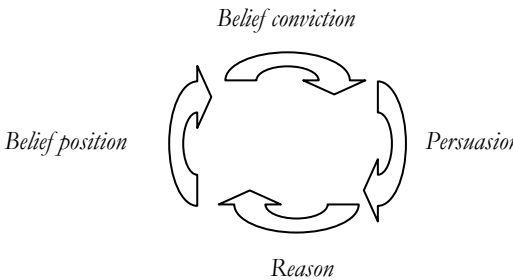
In asking what persuades us—or others—we are engaged in the effort to identify the *elements of persuasion*. Here is a short list:

- *Biases*—whether implicit (i.e., outside our awareness), or explicit, we are more easily persuaded by arguments that reinforce our existing biases (which are often shaped early in life). *Confirmation bias* (or *compatibility*)—being persuaded to believe arguments confirming existing beliefs—is particularly worth noting.
- *Clarity*—we generally find what is clear more persuasive than what is murky (but we do well to remember what we saw at the beginning of this chapter!).
- *Ease of comprehension*—closely related to clarity, we generally find more persuasive things that are easy to understand rather than difficult.
- *Plausibility*—we generally are more persuaded by arguments that on their surface immediately seem reasonable and likely to be true (usually because we share an arguer's presumption).
- *Presentation*—the way an argument is presented influences how persuasive we find it.

In evaluating an argument it is important to be conscious of the degree of persuasion it is achieving for oneself. If nothing else, consciously gauging how persuasive an argument seems may remind us that we are prone to regard the argument as true simply because it is persuasive. Starting with this insight provides us some measure of protection by reminding us to be skeptical of our own willingness to believe something.

Persuasion and Belief

In his famous book *On the Soul* (*De Anima*), Aristotle mused, "Every belief position implicates a belief conviction, belief conviction likewise with persuasion, and persuasion with reason."[26] He saw a series of links that tie together aspects of belief with persuasion and with reason. We might illustrate it this way:



When people form and then hold a belief position, it is because they have been convinced that position is true, and such conviction typically results from having been persuaded, and such persuasion typically involves reasoning. The wonderful and familiar Greek word *logos* is what English translates here as "reason" and it means a reckoning by which we give account for what we are thinking. What we often take as knowledge is actually belief following from persuasion but it is so convincing

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[26] Aristotle, *On the Soul,* 428a [III.3]. Hick's translation, 127, because the word I've translated as "belief position" is the Greek word *doxa*, which can mean either "belief" or "opinion," offers this: "every opinion implies conviction, conviction implies that we have been persuaded, and persuasion implies reason." The word "conviction" is actually another part of Greek belief vocabulary—*pistis*—and to make that plainer I've translated it as "belief conviction."

to us that it is easy to mistake our belief as actual knowledge.

Another ancient Greek philosopher, Democritus, wisely observed, "With respect to persuasion, it often happens that reason is stronger than gold."[27] We like to be intellectually convinced, even if we also often depart from reason because of the force of some compelling emotion. Most of the time we find ourselves indulging self-serving thinking that allows us to have our cake and eat it, too. We rationalize that our strong feelings are warranted and create reasons to justify them. Given an absence of knowledge we fall back on belief—and often then convince ourselves it is knowledge!

Resisting Persuasion

Avoiding self-indulgent rationalizing requires us to inoculate ourselves as best we can against being too easily persuaded. Our goal must be to make persuasion something earned and not lightly given. Social psychologists point out that there are two routes to persuasion:[28]

1. A *central route* focusing on *rational arguments*.
2. A *peripheral route* focusing on *cues* that bypass rational thought.

Our focus throughout most of this volume is on the central route because we are interested in understanding arguments as chains of reasoning advancing some claim. But persuasion need not rely on arguments

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[27] Democritus, Fragment 51 in Diels, *Die Fragmente,* 400 [Stobaeus, *Anthology,* II.4.12, IV.8.11].

[28] See Myers, *Exploring Social Psychology*, 167–68; also Aronson, *The Social Animal*, 73–75.

in this sense. They can instead "argue" by appealing to things alongside, or accompanying, an argument. Here are a few such peripheral cues people find persuasive:

- *Attractiveness* (including sex appeal) of the arguer or of something associated with the argument entices us to be more favorable toward it.
- *Fear* (or *anger*, or *hate*) roused by an argument may make us more likely to endorse it.
- *Heuristics*—mental "short cuts"—employed to simplify thinking and decision-making, especially when concerning some matter we do not care much about may persuade our support or rejection of an argument. An example is *satisficing*—choosing something because it is readily available and seems to solve a problem or issue (a heuristic often behind marriage decisions!).
- *Identification motives*, i.e., wanting to be like someone, can be persuasive (e.g., "So-and-so supports it, and I admire him/her, so I will support it, too.")
- *Timing*, such as the order of presentation of rival alternatives, can affect their degree of persuasiveness when we are exposed to them.
- *Visual associations* (e.g., the infamous Marlboro man in cigarette ads) evoked alongside an argument—such as found in multimedia messages—can be more persuasive than the actual accompanying reasons and evidentiary support of the claim.

Simply retaining awareness of the peripheral cues that might persuade us is valuable. They are often employed as *distractions* when an actual argument is weak.

If the goal is to persuade but the chain of reasoning is weak, then bypassing the rational mind through appeal to peripheral cues can be an effective strategy.

Here is a short list of measures best used together to resist illicit persuasion:

1. Start with *awareness of how persuasion works* (as seen above). This aids being *forewarned* that an attempt at persuasion is about to occur.
2. Seek *inoculation* by purposefully exposing oneself to weak versions of an argument; this helps resistance by providing opportunities to probe the argument's weaknesses and develop one's own position.
3. Practice *rational skepticism,* i.e., a sensible caution that invokes doubt before acceptance.
4. Invoke *counter-arguments* (including *exceptions* or *plausible alternatives*) to promote an ongoing open-mindedness even when an argument seems compellingly persuasive.

One thing not on this list is *reactance*—the tendency to automatically resist an argument simply because we know it is trying to persuade us. Persuasion in-and-of-itself is not evil.

Finally, despite the dangers posed, we must acknowledge that persuasiveness plays a legitimate role in arguments. Our goal is simply to keep its role constrained so that it does not exercise undue influence. One way historically championed as effective toward that end is relying on the central route of persuasion and crafting arguments to be maximally persuasive to the mind. This entails *how* an argument's chain of reasoning is shaped—its *form*—and that brings us to logic.

Chapter 5

Logic
(The Form of an Argument)

The impression one may gain from looking at some publications on arguments is that the only thing mattering is their logical form—or lack of it. But, as we shall see, the term "logic" is a slippery one. It might be best to begin by thinking broadly in terms of the *form* or *shape* an argument takes. This should naturally suggest our earlier discussion of Aristotle's three kinds of arguments—demonstrative, dialectical, and contentious. An argument's intention informs the shape it takes, and every shape, to be an argument, presents some chain of reasoning to advance a claim.

Of the six elements of our SIMPLE model, this fifth one generally poses the greatest challenge and is the one least likely to be pursued vigorously because for many people what is firmly entrenched in mind when the word "logic" is used is *formal logic*, especially deductive logic with its famous form of the syllogism.

First, let us be aware that in talking about *formal* logic we mean quite literally the *form*—the structure of the chain of reasoning, leading to a conclusion—shown by the argument being examined. Most arguments do not demonstrate formal logic; they are, with respect to formal logic, "illogical." That does not necessarily mean they are either irrational or unreasonable. But it does mean they have made no effort to secure by their form

any structured inevitably—any sense that because of *x*, then *y* must be true. A lack of formal logic means an argument has not secured a degree of soundness that it might by following formal rules of logic.

Given that most arguments do not demonstrate formal logic it may seem imprudent to give it as much attention as we do here. We might instead simply consider a variety of ways an argument can take form. This entails something similar to what we did in chapter 2. One simple way to classify arguments, as we saw there, is to divide them according to the *basic process* (empirical or rational) used, as we do when we distinguish between inductive and deductive forms. Another way, which we also considered earlier, is to distinguish types of arguments by their *contents*.

But here we are interested in the *form* of an argument, and as there are different forms this also is a way of categorizing arguments into different types. Every argument, of course, has some form or shape. However, over the centuries there has grown a general consensus that some forms are more conducive to rational thinking and more likely to yield sound conclusions. In fact, today when the "form" of an argument is discussed it almost always means a consideration of whether the argument is "logical," that is, that its form shows a particular kind of structure.

Logical & Presumptive Forms

We can distinguish between two basic kinds of logical form:

1. *Presumptive* (Informal Logic)
2. *Formal Logical* (Classical logic).

Formal Logical forms are either inductive or deductive. There are important differences between them, which are discussed below. But first, let us consider the kind of form found most commonly in arguments.

Plausible Arguments with Presumptive Reasoning

Think about the kind of "argument" encountered most commonly in life: an arguer advances a claim with a longer or shorter chain of reasoning which a receiver then responds to in some manner. This kind of argument occurs in the context of *dialog* and in the spirit of the ancient Socratic dialogs is commonly termed *dialectical*.[29] While ordinary, over-the-backyard-fence dialog might come to mind, what we have to say applies also to those arguments we often encounter through media (e.g., watching television), or reading. The point that matters here is that such arguments are *not* interested in using the form of arguing found in formal logic.

Argument expert Douglas Walton, with the kind of reasoning and arguments common to ordinary discourse in mind, remarks, "In such cases, typically, disputes cannot, given practical restraints, be definitively resolved by clear, obtainable evidence that proves, beyond doubt, that a proposition is true or false. Instead, such arguments are typically based on presumptions, and the argument is good or bad, successful or unsuccessful, insofar as a *prima facie* case can be made for or against it."[30]

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[29] We cannot in this volume explore the differences between Plato's Socrates and Aristotle on exactly what dialectical argumentation is. So in this chapter we will stay away from confusion by not using the term dialectical, which we have related already to argument *intention*.
[30] Walton, *Plausible Argument in Everyday Conversation*, 2.

In other words, such arguments can at best appear *plausible*—reasonable and probably true. Like Aristotle's dialectical and contentious intentions, these plausible arguments rely on persuasion. Unlike formal logical arguments, plausible arguments do not depend upon reasons and evidence, even though both may be offered. Instead, they rely on the receiver finding the claim and chain of reasoning plausible at first sight. They *seem* acceptable on first blush, or they immediately seem unacceptable.

Walton points out that the standards of traditional formal logic do not work for ordinary arguments. However, he maintains, "an argument can be quite successful and correct, in carrying out the job it was designed to accomplish, even if it was only plausible, rather than being deductively valid or inductively strong."[31] This invites us to follow many contemporary philosophical thinkers in enlarging our conception of what makes a "good" or "strong" argument.

Presumptive forms are considered by traditional philosophy "illogical" in form (i.e., not logical because not belonging to the type of formal logic), though it is better to see them described instead as *informal logic*. The conclusion that follows from the argument statements is not derived by either inductive or deductive logic. However, the claim may be and often is plausible.[32] We

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[31] Walton, *Plausible Argument in Everyday Conversation*, 3. He goes on to remark, "Plausible argumentation is opinion-based.

[32] Walton, *Argumentation Schemes for Presumptive Reasoning*, 13, notes that presumptive arguments are examples of plausible reasoning, "meaning that if the premises are true (or acceptable), then the conclusion does not follow deductively or inductively, but only as a

can thus profitably speak of *plausible argumentation* conducted according to *presumptive reasoning*.[33]

Presumptive reasoning producing a plausible argument follows its own pattern, one involving obligations on the part of both parties, the arguer and the receiver. The back-and-forth goes like this:

1. The arguer sets out a proposition (a claim with respect to something being true).
2. The receiver, not knowing whether the claim is true or not, agrees—"for the sake of argument"—to accept the claim.
3. The arguer reciprocally agrees to withdraw the claim if new evidence indicates it is false.
4. The arguer and receiver then interact as the claim is tested ("contested").[34]

One important difference between this informal logic and formal logic is that the *burden of proof* is shifted to the receiver from the arguer. Philosopher Robert Pinto observes, "[W]here a proposition has the status of a presumption, then the burden of proof lies with anyone who refuses to concede it."[35]

This is a part of why ancient philosophers like Plato reacted strongly negatively toward informal logic. Like the ancient Sophists with their clever oratory and skillful rhetorical devices, plausible argumentation aims

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reasonable presumption in a given circumstance of a case, subject to retraction if those circumstances should change."

[33] This way of characterizing such arguments follows the work of Walton, *Plausible Argument in Everyday Conversation*, though his other works also are informative on the subject as the notes show.

[34] See Walton, *Plausible Argument in Everyday Conversation*, 3–4.

[35] Pinto, *Argument, Inference and Dialectic*, 4.

to change the receiver's belief and need not concern itself with "knowledge." So presumptive claims to truth open wide the door to charges and counter-charges about a lack of concern for *real* truth. In our present day one form of this becomes charges of "fake news." If all that matters is persuasion, then where is truth left?

Some of the issues involved which generate debate about informal logic may be glimpsed when we start looking at specific kinds of presumptive reasoning. Here are a dozen types[36]:

1. Appeal to *analogy*—the argument's structure relies on comparison so that the chain of reasoning is that "because *a* is like *b*, what is true of *a* must be true also of *b*." Similar to an appeal to analogy is the kind of similarity found in an appeal to *precedent* (e.g., in law).[37] More broadly, an appeal to some *established rule* (e.g., policy) might also be mentioned here.
2. Appeal to *authority*—the argument's form is shaped entirely by an appeal to the weight presumed to hold for a source, whether a tradition (e.g., cultural practice), text (e.g., sacred text), or person (e.g., an expert).
    a. This often takes the specific form of *in position to know*, that is, the source is better positioned than we are to know what is the truth of a matter and so should be trusted.

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[36] For much more detailed discussion on this subject, see Walton, *Fundamentals of Critical Argumentation*. The examples listed in this chapter utilize both of Walton's books and the article by Walton and Macagno, "A Classification System for Argumentation Schemes."

[37] See Walton, "Similarity, Precedent and Argument from Analogy."

b. *Ad hominem* attacks may be seen as a negative variation in that the structure of the argument is to present reasoning as to why the source (a figure typically set forth as an authority) is to be rejected, and therefore the source's thinking and reasoning also should be rejected.

3. Appeal to *bias*—the chain of argument is negative in character and aims to persuade that a source and/or argument should be dismissed simply because it is biased.
4. Appeal to *commitment*—the chain of the argument's structure is simple: because a person already has affirmed a certain commitment *a*, and *b* seems in line with commitment *a*, then *b* also should be supported. (For example, "You always in the past have supported the church in its decisions; the church has made a new decision; therefore, you should support it.")
5. Appeal to *consequences*—the reasoning chain depends on some forecasted end or effect (whether positive or negative) and that consequence is used to justify the argument's conclusion.
6. Appeal to *correlation to infer causality*—the argument's chain of reasoning is that because there is a strong positive correlation between *a* and *b* (as one occurs or varies in some manner the other does so similarly), then *a* must cause *b*.
7. Appeal to *example*—the chain is formed less by its number of examples than by their representation as "typical," thus justifying the conclusion proposed.

8. Appeal to *majority opinion* (i.e., appeal to *popularity*)—the argument is structured by a chain of evidence presenting data showing what most people believe to be true. A variation is the appeal to *common sense*, an argument that even casual reflection commends the proposed conclusion because it is self-evident to a majority of people.
9. Appeal to *signs*—the argument's structure is to present evidence as signs of something (e.g., events *a*, *b*, and *c* are typically present when a severe thunderstorm is about to occur), and thus the conclusion is inferred from the signs (e.g., a severe thunderstorm is about to occur).
10. Appeal to a *slippery slope*—the structure aims to show in its chain of reasoning that an initial, seemingly harmless or innocent first step can produce a series of steps ending in disaster (e.g., if Viet Nam falls to communism so will all of Southeast Asia).
11. Appeal to *verbal classification*—the chain of reasoning depends upon identifying a certain defined characteristic as belonging to someone or something because that someone or something has been placed into a category of things having the characteristic. Arguments of this type often arise from some *redefinition*.[38]

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[38] Walton, "Arguing from Definition," 135, who offers as an example of this kind of argument the redefinition of "planet" that led to Pluto's exclusion as a planet, defines such an argument this way: "Argument from verbal classification concludes that a particular thing has a certain property on the grounds that this thing can be

12. Appeal to *waste avoidance* (*sunk costs*)—the argument depends on a precommitment (e.g., to an investment strategy) such that to change and absorb some loss (e.g., selling falling stocks) is unacceptable.[39]

Each of the kinds of argument listed above are "presumptive" in form because they rest on a basic presumption that generates the force of the argument. That basic presumption might be that an authority knows more and better than we do, or that if the majority believes something they are more likely right than a lonely individual could be. Whatever is the presumption, it is that presumption rather than the actual chain of reasoning in support that the argument's claim is most basically reliant upon.

In each form of argument listed above we can still see a chain of reasoning ending in a conclusion. But none of the conclusions *depend* on logic. Thus their forms may on occasion be formally logically valid, but there is no intrinsic mechanism in place to assure a valid conclusion and, as just stated, the reasoning does not depend on formal logic even if it seems to be present. The kinds of arguments identified here as presumptive are accordingly treated in formal logic as *fallacies* (failed reasoning). But that label is being avoided here because sometimes presumptive reasoning—which is exceedingly common—proves to be reasonable even if not formally logical.

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classified under a general category of things that have this property."

[39] On this kind of argument, see Walton, "The Sunk Costs Fallacy or Argument from Waste."

Formal Logic

Formal Logic as a discipline is a rather large and relatively self-contained part of academic philosophy. There are many aspects to such logic and a variety of types, some highly symbolic and quite complex. We shall not here be concerned with these. Our interest is in uncovering some value for formal logic in approaching arguments we hear or read—or form ourselves.

Unfortunately, we still immediately encounter some problems. First among these is simply knowing what "logic" is! The early 20th century giant of logic, Bertrand Russell, conceded that, "the word 'logic' is never used in the same sense by two different philosophers. . . ."[40] Later, the philosopher who catapulted a revival of logic in the mid-20th century through his "epistemic logic," Jaako Hintikka, with his colleague Gabriel Sandu, observed, "It is far from clear what is meant by logic or what should be meant by it."[41]

So, in a moment, we shall have to address this most basic problem. But there are others as well. For example, the history of logic has seen significant shifts over time, such as in the late 18th–early 19th century when notable conceptual changes modified Aristotle's classical ideas about logic. As we shall see, much of the attention given to logic since the mid-20th century looks rather different from what Aristotle propounded. So the system of logic being considered at any given time ties to the above problem of definition and makes any simple presentation . . . *not* so simple.

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[40] Russell, *Our Knowledge of the External World*, 33.
[41] Hintikka and Sandu, "What Is Logic?", 13.

In addition to the easily observed bafflement most people express when first encountering formal logic, there are studies indicating that such *formal logic may actually conflict with ordinary reasoning*.[42] But, leaving aside such a question, which is too large for our present modest goals, for our purpose of evaluating arguments the most significant problem lies in what psychological research suggests: *thinking in formal logic is so unnatural that it exercises a generally modest effect in most human reasoning*.[43] As we have seen, most of what we encounter in arguments exhibits informal logic, which strikes us as far more natural. Still, any gain in reasoning ability seems a positive and desirable effect, so better understanding formal logic is a good thing. Research in the early 21st century finds that formal training of students on matters of logic in order to improve reasoning does meet with modest success.[44]

Given what we have just covered, it seems reasonable to urge people to not be distraught if they find what follows strange, unnatural, and difficult. For those who choose to persevere, the gains—however modest they may seem—will show in increased confidence in one's thinking and that will have been well-earned.

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[42] Besson, "Logical Knowledge and Ordinary Reasoning."

[43] Gilbert, "The Logic of Ordinary Language," 93, citing cognitive research, observes that, "despite claims that logic courses help people reason better, training in formal logic does not appreciably affect how people reason in situations to which abstract logical principles are relevant."

[44] Leighton, "Teaching and Assessing Deductive Reasoning Skills." Modest success is also reported by Hoyles and Küchemann, "Students' Understandings of Logical Implication." Also see Daniel and Klaczynski, "Developmental and Individual Differences in Conditional Reasoning," with 10-, 13- and 16-year old students.

The Nature and Value of Formal Logic

The first thing we need is an understanding of what formal logic is and why it has value for us. One can obtain a variety of definitions from dictionaries or books on the subject, but they have particular features in common:

- Formal logic is a form of *reasoning*
- using *rules*
- to yield *sound conclusions* (*inferences*).

In short, formal logic intends *correct thinking*, meaning thinking that is "correct" by virtue of obeying established rules that can be assessed by established standards and thereby be objectively judged by anyone familiar with the rules and standards. The intent is to keep discourse from descending into mere shouting or the pure subjectivity of announcing personal opinions for which there is no rational accountability.

Let us focus a moment on these features, highlighted by the key words placed in italics above.

First, logic is a way of *reasoning*. While our model prioritizes reasoning—and that using logic—we must not pretend reason is the only way the ideas of an argument might be judged.[45] Reasoning itself can be divided into types: *pure* (or *theoretical*), and *practical*, with the former concerned with assessing the "truth"—or at

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[45] Angell, *Reasoning and Logic*, 608, writes, "Many ideas can be found, many alternatives settled, by direct observation, travel, simple experience achieved through acquaintance with new facts. Again, ideas can be received and accepted by reading, or listening to, what others tell us. Furthermore, in many cases these methods of arriving at and settling our opinions, are clearly the best ways—better than reasoning."

least the soundness—of arguments, and the latter about what one should do (i.e., ethics). While we do best to practice both pure and practical reasoning, it is the former most at play in understanding arguments.

Second, formal logic follows *rules*, which is to say that it is *systematized thinking*.[46] The rules of formal logic constitute the essential nature of this tool for reasoning. Rules are the heart of logic.[47] Because there are different systems of logic, there are varying rules. In other words, the systematized thinking of logic varies somewhat according to the system of logic being used. That said, we can identify certain basic rules that will be helpful for us in using the tool of formal logic.

Finally, the goal of logic in following certain rules is to end a chain of reasoning with a stable, trustworthy conclusion. An *inference*, as its roots in Latin indicate, "brings in" a conclusion. We often speak of this as "drawing" a conclusion, much as we might draw up a bucket of water as the result of a careful chain of actions that has followed a set of rules in order to get the desired result. Now the result might still be disappointing if the well is dry or poisoned, but it is still a *sound* result in that what has happened has been dependably yielded by the process followed. And that is all an inference in logic is about—bringing in or drawing a re-

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[46] The famous founder of Pragmatism, Charles Sanders Peirce, *Reasoning and the Logic of Things*, 124, reminds us that being systematic does not make logic automatically virtuous, "For that it has both advantages and disadvantages is I think not to be denied."

[47] Popkin and Stroll, *Philosophy Made Simple*, 149, put it this way: "[L]ogicians are interested in formulating general rules for correct reasoning, rather than in attempting to explain how reasoning operates. . . ."

sult that can be seen as sound (i.e., "valid") following from obeying the established rules.

A Special Note on Logic & Truth

Any time we talk about "truth" we are bound to run into difficulties. Philosophers have spent many centuries debating the nature of truth and how best to test truth claims. Some people find it helpful to distinguish between "Truth" and "truth"—grand, absolute certainties about fundamental matters and lesser truths that exist as best-we-know at the present. In formal logic, truth is considered with respect to two things:

- the *content* of the individual statements; and
- the overall *form* of the argument.

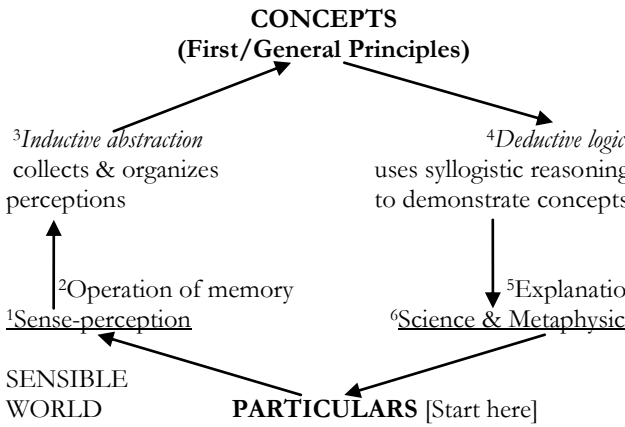
Quite naturally, people tend to focus on the truth content of the premises and conclusions in an argument. But because logic is principally about the *form* an argument takes, the form's "truth" also matters. But when we talk about truth in this latter respect we are meaning something a bit different from the truth of content. We instead have in mind truth as "correctness" and "validity." True logic in terms of form is a correct chain of reasoning that forms a valid conclusion, *whether the content of that conclusion is true or not*.

While formal logic aims at truth in the content it cannot guarantee achieving it. Rather, the focus becomes on whether "soundness" of thinking is attained: truth of the form even if not truth of the content. What we term illogical reasoning can sometimes achieve truth in content and formal reasoning is sometimes false! Taken together these ideas mean we must avoid exaggerating logic's place. It is a tool and nothing more; its value depends on how well and appropriately it is used.

Aristotle's Classical Logic

The origin of logic is commonly linked to the 4th century B.C.E. Greek philosopher Aristotle. But even in Greece its roots are older, and evidence of a rise in logical thinking is found elsewhere in the ancient world, such as in India.[48] But Aristotle gets pride of place for developing the first early system of formal logic.

We may call Aristotle's ideas about logic 'Classical Logic.' Here we will only touch briefly on a few key ideas. Likely each of us learned in school his distinction between two basic kinds of logic, inductive and deductive. But we might not have learned how both fit together for Aristotle as important parts of a broad view about knowledge. So, let us first see the big picture:



[48] On this whole matter, see Gabbay and Woods, *Handbook of the History of Logic, Volume 1*.

Please note the numbers above, which show the flow and gradual development of human knowledge, a process intrinsic to human nature.[49] We all start in the world of our sense experiences. That world is an almost overwhelming collection of particular sensations (#1), which we gradually remember (#2) and organize (#3). We thus arrive at certain generalizations about the world we experience, which in philosophy often serve as so-called "First Principles"—notions so certain they seem unquestionable and become a foundation for our reasoning about the world. From these principles we reason using rules (#4) to explain the world and our experience of it (#5) and these explanations constitute things like science and metaphysics, which aim to explain both particulars and the basic or essential nature of reality (#6).

In light of this illustration we have two kinds of logical reasoning:

1. *inductive* (bottom-up) reasoning from particular instances to form generalizations;
2. *deductive* (top-down) reasoning from general premises to specific conclusions.

To these two it has become common to add a third: *abduction*, a word coined by philosopher Charles Sanders Peirce. He related it to the formation of explanatory hypotheses, arguing it offers the only way in reasoning to introduce new ideas.[50] We shall not further

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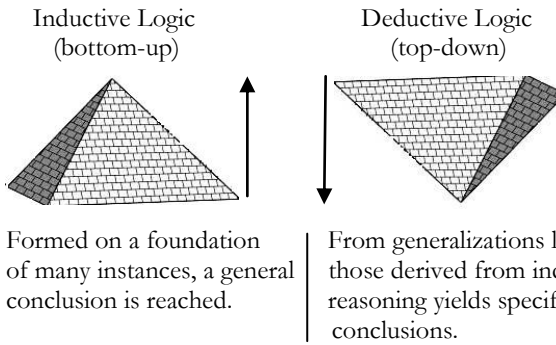
[49] Aristotle, *Metaphysics*, 980a21, declares, "All people by nature stretch themselves toward knowledge." Reeve's translation, 2, renders the Greek as, "All humans by nature desire to know."

[50] Peirce, "Three Types of Reasoning," 5.172, writes, "Deduction proves that something *must* be; Induction shows that something

explore abduction in this volume although it is both an interesting and important matter to learn about.

Induction and deduction generally get more attention. We can illustrate the difference between induction and deduction this way:



We should avoid pitting these against each other. As the famous mathematician and philosopher Alfred North Whitehead pointed out, opposing induction and deduction makes about as much sense as "the two ends of a worm to quarrel."[51]

So let us offer an example that might assist seeing how these two basic kinds of reasoning relate to one another. As an example of induction, we might notice

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actually is operative; Abduction merely suggests that something *may be*."

[51] Whitehead, "Address," 142, remarks, "A more important question is the relation of induction, based on observation, to deductive logic. There is a tradition of opposition between adherents of induction and of deduction. In my view, it would be just as sensible for the two ends of a worm to quarrel. Both observation and deduction are necessary for any knowledge worth having." He concludes (143) by adding, "Neither logic without observation, nor observation without logic, can move one step in the formation of science."

that every time we have dropped an object from our hands it has fallen to the ground. After many instances we form a generalization that explains this observed situation: we call the reason that things dropped from our hands always go down toward the ground "gravity." Observation tells us dropped things fall.

Deductive Reasoning & the Syllogism

Deductive logic starts from a general idea like gravity and applies it to a specific conclusion through a chain of reasoning called a *syllogism*. Aristotle wrote, "A syllogism is a form of words in which, when certain assumptions are made, something other than what has been assumed necessarily follows from the fact that the assumptions are such."[52] The American pragmatist Charles Sanders Peirce labeled the parts of the syllogism as *rule*, *case*, and *result*,[53] though it is more common to find these identified as major premise, minor premise, and inference (or conclusion).

Thus the form of a syllogism has these three links in its chain of reasoning:

1. A statement assumed to be true.
2. Another statement assumed to be true.
3. A conclusion drawn from these statements.

Here is a syllogism easily seen as offering deductive reasoning that follows from our inductive reasoning that led to the generalized explanation of gravity:

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[52] Aristotle, *Prior Analytics*, 24a [I.1]; the quote is from Tredennick's translation, 201.

[53] Peirce, "Deduction, Induction and Hypothesis," 132. In contrast, induction is "the inference of the *rule* from the *case* and *result*" (133).

1. All dropped objects will fall.
2. I drop the ball in my hand.
3. Therefore, the ball will fall.

In the above syllogism we might just as well have said for our initial premise, "Gravity causes all dropped objects to fall." The general idea of gravity is implicit in the explicit statement that all dropped objects fall.

Traditionally, discussions of logic focus on deduction and begin by describing the syllogism in its basic or standard form. Syllogisms have a very particular form. The first two numbered items in the example above are *premises* and the third is the *inference* or *conclusion*. The chain of reasoning in a syllogism (which is the most famous form of deductive reasoning but not its only kind) is premise—>premise—>inference. If we use symbols we have a formula that looks like this:

1. All A is B. (*Major Premise*)
2. C is A. (*Minor Premise*)
3. Therefore, C is B. (*Inference/Conclusion*)

Let us take the first premise. It has four elements, all of which must be present in a syllogism. These are:

- a *quanitifier*—in this case, "All" (but in other instances it might be "Some," "None," "Nothing," or "No"); followed by. . .
- a *subject*—"dropped objects" (=A), which is what the statement is about; and
- a *predicate*—"fall" (=B), an assertion about the subject), with the subject and predicate linked by. . .
- a *copula*—a coupling—of the subject and predicate by a verb.

Every statement—both premises and the conclusion—must have the latter three elements (subject, predicate, and copula), and might have all four.

Each premise is a statement, but we can see in our example that these are of two kinds:

- The first premise (major) presents a *class* of objects identified by the characteristic that defines membership in the class—in this case, that the class of "dropped objects" is defined by the characteristic that they will fall.
- The second premise (minor) presents a *particular* object—in this case, "the ball in my hand"—assumed to be a member of the class named in the first premise ("dropped objects").

The inference presents an *assertion*—a statement following from the two premises together that alleges some truth—in this case, "the ball will fall."

To be sure we see how this works, let us turn to what is probably the most famous of all syllogisms. Its form is this:

1. All men (A) are mortal (B).
2. Socrates (C) is a man (A).
3. Therefore, Socrates (C) is mortal (B).

I've added the symbolic notation so this syllogism can be compared to the formula offered earlier. The first, or major, premise presents the class of objects ("men"), which is the subject. About it the predicate ("mortal") is said. The subject and predicate are tied together by the copula (verb "are"). The inference presents a conclusion following from acceptance of both of the premises. When both premises are accepted then the conclusion must also be accepted.

Now both examples are a little misleading in one important respect: one is likely to judge both as not merely correct in form, but also true in conclusion. When a syllogism is correct in form it is called *valid*, meaning it has played by the rules and leads to a sound conclusion (meaning an inference that follows reasonably from the premises). But that is not exactly the same as being *true* (in content).

Let us suppose our syllogism looks like this:

1. All men are dogs.
2. Socrates is a man.
3. Therefore, Socrates is a dog.

The only change made is substituting the predicate "dog" for "mortal." But look how it complicates things. First, the word "dog" might be meant literally, or figuratively (i.e., "dog" as a "cad" or "scoundrel"). The syllogism is still valid in form, meaning it is correct in its reasoning in that it has followed the rules and the inference is drawn correctly. But a person is much less likely to judge as true in content the assertion that Socrates is a dog, either metaphorically or literally.

Deductive reasoning is not limited to the classical syllogism of a major and minor premise followed by a conclusion. Deductive reasoning often has more than two premises. Once a deductive argument presents as logically valid it remains valid regardless of any new premises added to the chain of reasoning. This property of formal logic is another reason it appears unnatural because outside of formal logic when new information

appears it often prompts a person to come to a different conclusion. It changes the argument.[54]

Clearly such a situation as just described suggests a degree of artificiality in formal logic where what matters most is how you obey rules rather than follow what may seem to be natural reasoning. Several times in this discussion there has been reference to "rules." In fact, it was suggested above that systematic thinking according to established rules is the very heart of what logic is. A helpful way to envision logic in analyzing arguments is to imagine playing a game—the Logic Game.

The Logic Game

The connection between logic and game-playing has long been noted and in the last half-century, with the development of Artificial Intelligence, has become quite prominent.[55] Let us see if we can translate the basic ideas about logic we have been exploring into a set of simple rules and strategies.

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[54] This feature of deductive reasoning is termed *monotonicity*. See Walton, *Argumentation Schemes for Presumptive Reasoning*, 21, 151. Ferguson, "Monotonicity in Practical Reasoning," 335, writes, "Classic semantics entails that once any deductive argument qualifies as valid, it remains valid, no matter how much additional information is entered as premises. Beyond this, even if contradictory premises are added to the basis of the argument, the validity remains undisturbed."

[55] The connection appears to go back to ancient times. Van Bentham, *Logic in Games*, 2–3, remarks, "While the origins of logic in antiquity are not well understood, reflection on legal, political, or philosophical debate seems a key factor in its emergence in the Greek, Indian, and Chinese traditions. Consider that debate clearly resembles a game. A person may win an argument, upholding a claim against an opponent, but there is also the bitter taste of defeat."

In broad strokes, the Logic Game includes:

- Two or more who are playing sides, one being the *arguer(s)* and the other the *receiver(s)*.
- An *objective* of creating a winning argument: a chain of reasoning to reach a necessary conclusion that must be accepted by the receiver.
- *Rules* to govern what is acceptable in forming a chain and drawing a conclusion.
- *Strategies* to lawfully achieve the objective in accordance with the rules.

The most fundamental rules are these:

1. *Each premise must win assent as true.*
   a. Every statement from which the conclusion will be drawn must be assumed true by the person making the argument; and
   b. Every statement must also be granted as true by the person receiving the argument.
2. *The chain formed by the premises must proceed from a general case to at least one specific instance.*
   a. There must be a *class* of objects identified by some characteristic that defines membership in the class.
   b. There must be a *specific instance* of an object assumed to be a member of the class under consideration.
3. *The conclusion must follow necessarily from the chain of premises.*
   a. The conclusion must include relevant terms drawn from both major and minor premises.
   b. Those terms must connect the premises.

In our syllogism about the mortality of Socrates, the argument "wins" the Logic Game by following all the rules. Each premise is self-evident and easy to assume as true (Rule #1). The chain formed starts with a general case, the mortality of all men, and proceeds to a specific instance, the man Socrates (Rule #2). The conclusion being drawn from the premises—that Socrates as member of the class "men" is also mortal—is demonstrated by the terms used, which not only come from the premises but connect them (Rule #3).

Now these basic rules work wonderfully well for determining whether a syllogism is a winning argument or not. Remember, winning is having a *true form*—what we call being a *valid argument*—not necessarily one that is true in its content. In other words, from the point of view of formal logic, where the ultimate concern is with the *form* of the argument rather than its content, an argument can be manifestly false in content and still win the game as true in form.

The rub in playing the Logic Game almost inevitably comes with 1b in the Rules: "Every statement must also be granted as true by the person receiving the argument." This requires the receiver to suspend judgment for a moment as to the truth of the content. The receiver *must* assume the truth of the statement—must go along with the arguer—in order to see if the resulting argument form proves valid. Remember, the goal of the game is to craft a logically valid argument, not one whose content is true. That is why it is well to see formal logic as a game—an artifice—because all we are doing in playing the game is judging whether an argument is sound in form.

After the game is concluded with respect to the form of the argument, the receiver can offer assent or dissent to the actual content. But that is no longer playing a game; it is engaging in an effort to determine the truth of the argument's message.

It may be helpful to simplify and rephrase the rules in more informal and ordinary language:

1. There must be a statement of *what* is being argued as true.
2. These statements must show *why* a conclusion must be accepted.
3. The resulting chain of statements and conclusion must show *how* they are connected to each other.

What is being argued as true is the argument's claim or "conclusion," regardless of where it is found; it might be at the beginning, at the end, or somewhere between. *Why* the claim/conclusion must be accepted is drawn from the premises, which offer reasons and/or evidence in support of the conclusion drawn. *How* the "why" connects the "what" forges the chain of reasoning that shows there is one unified argument. The way this is done is by drawing upon relevant terms found in the *why* sections and putting them together in the *what* section so that something new is created. In our famous syllogism this new insight—"Socrates is mortal" draws upon both premises, as shown by using relevant terms from each ("Socrates" from premise 2 and "mortal" from premise 1).

The Logic Game described above applies to both arguers and receivers and can be used to assess the form of any argument. But our focus in this volume is

on the receiver of an argument and so our remarks now will focus on that perspective.

It often is quite obvious by simple inspection whether an argument is adhering to formal logic or not. But few arguments actually appear in the form of a syllogism. Deductive reasoning may be much more complex than a syllogism. Playing the game, then, requires a detective's skills to identify which statements are serving as premises, what the conclusion is, and whether these are connected such that the conclusion follows validly from the premises.

Because of this, the most *basic strategy* for playing the Logic Game as the receiver of an argument is as follows:

1. Identify the claim (conclusion)—*what* is being asserted as being true. (Remember, it might be stated first, last, or anywhere between.)
2. Identify the reasons—*why* statements offering reasons or evidence for the conclusion.
3. Identify the connection—*how* the *what* and *why* are linked (the chain of reasoning).
4. Assess whether the *how* legitimately joins the *what* to the *why*—in other words, "Is the conclusion supported?"

Three steps of *identification* precede one step of *assessment*. The step of assessment typically not only asks whether the conclusion is supported, but, granting that it is, whether it is strongly or weakly supported. The strength of an argument's form is judged by the degree

of sufficiency and clarity that the *what* is shown by the *how* to support the *why*.[56]

A Last Word on Inductive and Deductive Reasoning

Earlier it was noted that when logic is discussed the conversation soon turns to deduction and then stays there. It is reasonable to ask why. A chief reason is that most of us, including philosophers, are more interested in knowledge than in belief, in what is *certainly* true rather than what is *probably* true.

Induction can never yield more than probability. No matter how many particular instances one has seen of dropped things falling, one has not seen every instance or every possible instance. Perhaps somewhere, sometime, an object is dropped and it does *not* fall. Simply because every particular known fits the general idea we form from experience does not guarantee that it is always true.

Deductive logic, however, makes a necessary assumption: the general rule can and has been verified as a certainty—it has become a "first principle." For instance, 2+2=4 relies on a mathematical first principle such that 2+2 will never equal 3 or 5 or anything else than 4. Mathematics depends on the certainty of its first principles. Philosophers regularly advance first principles of their own, like Rene Descartes' *Cogito, ergo sum*—"I think, therefore I am." From that one certain starting point he then went on to develop through reason an

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[56] Bickenbach and Davies, *Good Reasons for Better Arguments*, 149, write, "The minimal requirement of good arguments is that they provide reasons in support of a decision, judgment, or other assertion functioning as the conclusion. But more is required: the reasons must be good reasons."

entire philosophy whose every part, logically related to his first principle, seemed to him to be assured as true.

Because people prefer what is certain to what is probable, they gravitate toward deductive logic—at least relative to inductive logic—and at least in theory. In actual practice, though, people typically acknowledge the unlikelihood of achieving certainty and accept a degree of "knowing" that suffices for the need and situation. Thus inductive logic—whether recognized as such or not at the time—is common. And, as we indicated to begin this chapter, informal logic used by presumptive reasoning in plausible argumentation is most common of all.

An awareness of different kinds of reasoning, their degrees of dependence on formal reasoning, and their practical effects in helping live a more rational life, are all aims of a focus on logic. Regular employment of the SIMPLE model can aid in developing more aware and disciplined thinking. At the very least, learning to distinguish between knowledge and belief, while refusing to credit the latter as the former, can cultivate a rational humility that fosters respectful dialog as arguer and receiver strive together to make sense of the world and of human experience.

Chapter 6

Emotion (Examining Feeling)

In the history of the formal study of arguments there is a long, deep, and sometimes bitter animosity toward the presence of emotion. As we saw in the last chapter, the form of an argument prized by philosophers is one shaped by logic. Yet in our chapter on persuasiveness we observed that arguments are often successful not because they rely on a central route of persuasion using careful reasoning supported by evidence, but because they rely on peripheral routes that stir emotional responses. In more recent times the role of emotion in arguments has gained new attention, in large part because informal reasoning (i.e., reasoning aside from logic) is being given closer scrutiny.

The disfavor of emotion with respect to arguments goes back at least to Socrates and Plato in the 4th century B.C.E., both of whom concluded that arguments relying on persuasion rather than logically compelling reasoning were about belief and not the certainty associated with knowledge. Since then it has become entrenched in academic thinking that an emotional component is a sign of a logically weak argument—and that logically weak arguments should be globally assessed as weak no matter how persuasive they prove to be.

In the last chapter we saw the chief concern: arguments logical in form fashion chains of reasoning that

support their claims with reasons and evidence; they aim to lead to new knowledge. Arguments that rely on presumptions replace evidence by the presumption and only produce belief.[57] Who wouldn't prefer knowledge?

The key to understanding the power of presumptive arguments' persuasive power lies not in logic but emotion. In fact, points out Douglas Walton, who has devoted his career to the study of arguments, "The basis of all persuasive argumentation lies in the choice of suitable initial premises for convincing your respondent through your ability to have empathy with your respondent."[58] In other words, persuasive presumptive arguments depend on feeling and emotion, specifically the establishing of an empathic resonance between arguer and recipient, a sense of, "I'm *with* you."

Walton also points out, "There is nothing wrong or fallacious *per se* with appeals to emotion in argumentation."[59] People are emotional beings and we process matters using feelings as well as thinking. Indeed, a recipient's mood when encountering an argument can demonstrably influence the ability to accurately assess it. For example, a number of research studies have consistently found that people when sad are able to discriminate between strong and weak arguments, being persuaded only by strong ones, while those who are happy fail to distinguish strong from weak arguments and are moderately persuaded by both.[60]

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[57] Walton, *The Place of Emotion in Argument*, 1–2, notes that arguments based on emotional appeals tend to be logically weak because they rely on some presumption rather than actual evidence.
[58] Walton, *The Place of Emotion in Argument*, 255.
[59] Walton, *The Place of Emotion in Argument*, 257.
[60] Clore and Isbell, "Emotion as Virtue and Vice," 118–19.

Still, some people erroneously discount feeling and emotion as factors to consider when looking at an argument and leave them entirely aside. Others start and pretty much end there, relying on feelings and emotions to tell them all they need to know about an argument and how to respond to it. But there is a middle path between these extremes.

Feelings as Information

Let us start by recognizing that *feelings are a kind of information*. This idea was briefly mentioned in chapter 3 on the messages of an argument. There, under the label of information, both emotions and feelings were named. As a source of information feelings can be assessed like any other source. That they often are not so assessed is because of factors we shall shortly turn our attention to consider.

The difference between a "feeling" and an "emotion" is conceptually simple:

- *feelings* are what register internally when we are affected by something so that it stirs us;
- *emotions* are what is expressed in fleshing out our feelings into actual behavior.

This means feelings do *not* have to result in emotions. In fact, while it is important to *experience feelings*, it is not always advisable to *express emotions*.[61]

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[61] A good example of this is anger. Social psychologist Carol Tavris, *Anger*, 139, observes, "Talking out an emotion doesn't reduce it, *it rehearses it*." For example, she points to research with students finding that (141) "those quick to express anger were less self-controlled, tolerant, and flexible. . . ." Other research she cites shows that expressing anger builds it.

Two Kinds of Feelings

At the level of feeling we can distinguish two kinds:

- *Reflexive*—as the name suggests, the feeling one immediately experiences is like a reflex (and is sometimes called 'instinctive'); and,
- *Reflective*—the consequent feeling after the mind kicks in and adds a thinking component.

As the above suggests, this division separates feelings into those arising before and after conscious thought.

Professional counselors, in probing a client's feelings, sometimes make use of this division by inviting the client to move back behind the obvious (reflective) feeling to the often still unconscious reflexive feeling. Thus, for example, it is not uncommon that a feeling of anger is a reflective feeling masking a reflexive feeling of hurt.[62] By accessing the reflexive feeling that may underlie a reflective feeling persons gain valuable information about a first response to an event, including the first feeling response to an argument.

The Rational Nature of Reflective Feelings

Ancient philosophers studying the nature of knowledge wrestled with the role, if any, of feelings and emotions. They often came to differing conclusions on the subject, but for the most part they distrusted feelings and emotions because they judged them as a power in the *psyche* that disrupts and too often displaces a dispassionate reason. Rather than lead to knowledge, or be a

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[62] This recognition is hardly a modern one. The ancient Stoic philosopher Seneca the Younger, *On Anger* (*De Ira*), II.1.3 dissects this process. See the discussion in Bolich, *Knowledge*, 176–81.

form of knowledge, feelings and emotions were more commonly associated with belief and ignorance.

The ancient Stoics, for example, regarded feelings and emotions as rooted in the rational part of the *psyche* (a view at odds with other philosophical schools), but still only capable of yielding beliefs (and thus ignorance). Their treatment of the matter seems concerned with what in this chapter is being called reflective feelings and the emotions they generate. Together the result is an "emotional belief." The Stoic philosopher Chrysippus listed five characteristics of such beliefs:[63]

1. They show *rationality*—reason is, at some level, guiding decisions, motivating actions, and serving as a foundation for evaluations.
2. They generate *judgment*—a supposition about what has happened (e.g., "I have been wronged").
3. They are *erratic*—within the person they produce an "exceeding motion."
4. They are *immediate* (or "fresh").
5. They are *impermanent*; most pass quickly.

These characteristics suggest that while feelings as a source of information are immediately accessible and impressive, they may not be as reliable or valuable as other kinds of information. So while they should not be discounted, simply relying on this one source—what we might call *emotional thinking*—is ill-advised.

Using anger as an example, the Stoic philosopher Seneca the Younger explained emotions this way:

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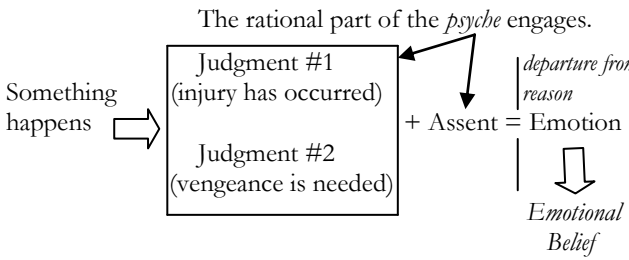
[63] Chrysippus, *On Affections* (*Peri Pathōn*), known now only through other ancient sources such as Galen and Stobaeus. See Tieleman, *Chrysippus' On Affections*.

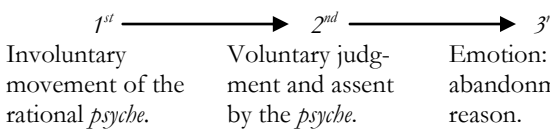
> Our position is that anger undertakes nothing on its own, but instead depends on the rational soul's approval. To take hold of an appearance as having received an injury, and add longing to avenge it, is to join under one yoke two things—that one ought not to have been injured and one ought not to withhold vengeance—and this is no mere impulse set in motion involuntarily. An impulse is a simple thing, but this is a complex matter comprised of many parts: someone has perceived something, has been offended by it, has condemned it, and now seeks to be avenged. None of this is possible unless the rational soul assents to the appearance which strikes it.[64]

We can put this into picture form:



What begins in a rational *psyche* becomes irrational.

This leads to Seneca envisioning a process of three separate motions in the *psyche*:



While such motions occur in both sender and receiver, our focus—like Seneca's—is on the recipient.

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[64] Seneca, *On Anger,* II.1.3–5.

When we place this process in the context of the experience of an argument's affect upon us, we may say that the initial involuntary motion in the *psyche* is what is termed here a reflexive feeling. The reflective feeling is the conscious mind adding in some judgment decided upon based at least in part on the unconscious reflexive feeling. This judgment is assented to as proper, or as acceptable, and then flows out in the final motion as an emotion—a visible communication of feeling.

Emotions as Communication

Let us now shift our attention to emotions. We may start where the last section ended: *emotions are a form of communication*. This may be directed at:

- Self—as an indication of how one has been visibly stirred by a feeling or feelings, and/or at
- Others—as a way of visibly registering a feeling, or feelings, about the argument.

What people sometimes term "stifled emotions" are those recognized by the individual but held back as much as possible from being visibly sent to others. They are more than just feeling, though, because the motion is outward, though curtailed. It registers principally in the person whose feeling originates it and communicates to that self. We all are familiar with such "checking" of our emotions. Being stirred, for example, by some argument we become aware of its effect on us and a surge of outward emotion is quickly arrested, for whatever reason. What matters to us here is that when this happens we are keenly aware that we *want* to direct some emotion to another but *choose* not to do so anymore than has already happened. It may be that someone else present may discern our agitation, but the

force of the emotional communication is to our own person.

More often, though, when we think of emotions as communication we have in mind an emotional display intended to say something to someone else present. When an argument is directly presented by the arguer, the emotional response to the recipient can indicate to the arguer the acceptance or rejection of the argument. Yet often we receive arguments at secondhand, by some third party who may or may not support the claim of the arguer. An emotional response then is likely to be dual in nature—aimed in part at the absent arguer but also aimed in part at the third party conveyor of the argument.

Obviously even this little we have covered indicates some deep waters we simply cannot dive into in this brief exploration of arguments. We must suffice ourselves at this point with grasping that feelings can generate emotional responses that may be aimed at ourselves and others, including the arguer, whether the arguer is present or not.

Feelings & Emotions in Arguments

We now are better prepared to see how feelings and emotions play a role in arguments and their effectiveness. We begin by noting that there are two poles involved and both of these matter because they interact, like lines of magnetic force attracting or repelling:

Arguer/Argument's Emotional Appeal ⟷ Recipient's Feeling State & Emotional Response

Let us revisit certain ideas we have covered earlier in this volume. For example, we noted how peripheral

routes of persuasion may appeal to strong emotions such as anger, fear, or hate. But they do not have to be negative emotions. Consider how effectively disarming a self-deprecating joke can be; it can in an instant win a suddenly relaxed and happy recipient to the arguer's side. As we noted at the beginning of this chapter, as emotional beings we bring our feeling states with us when we encounter arguments and those feeling states can affect our ability to judge the argument—and that is *before* the argument uses any emotional appeal of its own!

Argument appeals to a recipient's feelings that are aimed to provoke a particular emotional response can be quite calculated and often take the shape of one or another appeal often labeled by formal logicians as "fallacies." We covered some of these earlier, such as in our discussion of presumptive bases for arguments last chapter. Walton identifies four in particular as resting on emotional appeals.[65]

But while focusing on particular appeals can be illuminating, we need not to lose sight of the forest for our examination of particular trees. It is perhaps more useful for us at this point to try to find some common element or thread among these emotional appeals. Walton himself succinctly puts the matter this way: "Emotional appeals work by appealing to a respondent's strongest personal bias."[66]

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[65] Walton, *The Place of Emotion in Argument*, 65–224 (chs. 3–6): an appeal to popular sentiment (*Argumentum Ad Populum*); an appeal to pity (*Argumentum Ad Misericordiam*); an appeal to fear or threat (*Argumentum Ad Baculum*); and, an appeal against the person of an opponent (*Argumentum Ad Hominem*).

[66] Walton, *The Place of Emotion in Argument*, 257.

We are all most vulnerable to an argument where our own biases are strongest. Because personal bias can predispose us to accept or reject an argument's claim quite apart from reason or evidence, thus reducing even a strong logical argument to our own prejudice, the most effective course is preventive in nature: *systematically explore personal biases*.

The challenge is much like that faced in trying to get behind reflective feelings to uncover reflexive ones. How does one peel back the curtain of consciousness to see the hidden forces lurking in the shadows? But one advantage in exploring personal biases is that, although largely unconscious, they have more endurance than transitory reflexive feelings. Their persistence is what can make them a problem, but that stability is also what makes it possible to detect them since they will show in various ways given the right stimuli.

One effective way to pursue such a task is by taking advantage of *tests of implicit beliefs*. The Harvard Implicit Association Test (IAT) selections available through Project Implicit[67] probe implicit associations one may hold in a number of areas related to social attitudes (race, gender, religion, sexual orientation, etc.), and health (anxiety, alcohol, eating, etc.).

A caution is in order, however: these tests probe *implicit* (unconscious) beliefs and attitudes. People commonly react with disbelief and even anger when results they receive show some variance from their *explicit* (conscious) beliefs and attitudes. A frequent complaint concerns how little time is allowed for responses

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[67] Visit https://implicit/harvard.edu/implicit.

to prompts. The matter of response time is crucial. Because these are unconscious the goal is to get a *reflexive* (unconscious attitude) response rather than a *reflective* one (a conscious adjustment). Empirical research aimed at testing the degree of success in IAT results has offered support that such tests get at something both real and distinct from explicit, conscious attitudes and beliefs. Such studies also point out that implicit associations do not predict an individual's actual behavior; explicitly held attitudes and beliefs do that. However, an unconscious bias can exist beneath a conscious attitude and becoming aware of that may shift a person toward more congruence between internal beliefs, conscious attitudes, and actual behavior.[68]

The goal of uncovering implicit biases lurking in unconscious beliefs and attitudes is to rob them of their power. As psychodynamic psychologists since Freud have reported, to rob unconscious forces of much of their power one must make them conscious. In so doing the effect they may exert when encountering an argument may prove sufficiently modified to protect one from judging an argument based on personal vulnerabilities rather than the argument's own merits.

Unfortunately, implicit biases—"mind bugs" as Mahzarin Banaji calls them—are resistant to extinction.[69] Experts like Banaji and her colleague Anthony

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[68] Karpinski and Hilton, "Attitudes and the Implicit Association Test." On the purpose of IAT work to unravel beliefs and make what is unconscious conscious, see Banaji, "Unraveling Beliefs." Also see Greenwald and Banaji, "Implicit Social Cognition."

[69] Banaji and Greenwald, *Blindspot*, xii, write, "Once lodged in our minds, hidden biases can influence our behavior toward members

Greenwald instead recommend focusing on persistence in reducing implicit bias. In examining how to "outsmart" one particular mindbug they offer three general ideas that seem applicable to contesting all implicit biases: First, foster an *awareness* of one's implicit biases; second, have a *desire to improve* by reducing them; and, finally, practice *methods* of reduction.[70]

While changes to implicit biases are frustratingly elastic, with a tendency for them to reassert themselves without constant vigilance, Banaji and Greenwald note that implicit biases can successfully be weakened by relatively minimal interventions. Four strategies that can be culled from their work are:

1. Increase exposure to diversity.
2. Build up associations to counter the stereotypes commonly encountered.
3. Consciously neutralize bias effects.
4. Counter automatic effects such as first impressions by recognizing such effects and consciously trying to overcome them.[71]

Researchers Chloë FitzGerald and colleagues conducted a systematic review of interventions tried with implicit biases and found eight that work at least sometimes. Of these the most generally successful were employing intentional strategies (such as named above), and purposefully exposing oneself to examples that counter stereotypes.[72] The work is always up to us.

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of particular social groups, but we remain oblivious to their influence."

[70] Banaji and Greenwald, *Blindspot*, 147.

[71] Banaji and Greenwald, *Blindspot*.

[72] FitzGerald et al., "Interventions," 4–7

SIMPLE Checklist (Brief)

SOURCE

- Where is the argument found and who is the arguer?
- How credible is the arguer and the sources used?

INTENTION

- What is the aim of the author's argument? Is it . . .
  - to demonstrate that a specific case or object necessarily belongs to some general concept or category? (Demonstrative argument)
  - to persuade that a widely endorsed claim, or one backed by the most wise, is the most reasonable based on available reasons and evidence? (Dialectical argument)
  - to persuade that a claim, based on a shared presumption, is plausible? (Contentious argument)

MESSAGES

- What is the information offered?
- What is the meaning (purpose or significance)?
- How do context and background matter?

PERSUASIVENESS

- How persuasive is the argument?
- Why is it persuasive, or not persuasive?

LOGIC

- Is the form of the argument presumptive (informal logic), or based on reason and evidence (formal logic)?
- Does the argument claim adequately follow from the presumption or the support provided for it?

EMOTION

- What feelings/emotions are aroused by the argument?
- What judgment follows from these feelings/emotions?
- What personal biases are implicated by these feelings/emotions?

SIMPLE Checklist (Detailed)

SOURCE

- ☐ Where is the point of origin for the argument?
- ☐ What sources does the arguer use?
- ☐ Common measures of source credibility:
  - o Expertise/authority of arguer?
  - o Homophily: Is the argument being seen as credible because the arguer seems to be like yourself?
  - o Peer Review: How do trusted others assess it?
  - o Trustworthiness: Does it seem honest/reputable?
- ☐ Better measures of source credibility
  - o Explicit evidence used in support?
  - o Openness: Is it open to contrary evidence, new evidence, plausible alternatives, or future revision?
  - o Reliable process: Does the argument rely on processes that can be reproduced to test their reliability?
  - o Valid method: Are methods used accepted as sound?

INTENTION

- ☐ Is it a Demonstrative Argument? (Aim is to demonstrate that a specific case or object necessarily belongs to some general concept or category.)
- ☐ Is it a Dialectical Argument? (Aim is persuade that a widely endorsed claim, or one backed by the most wise, is the most reasonable based on available reasons and evidence.)
- ☐ Is it a Contentious Argument? (Aim is to persuade that a claim, based on a shared presumption, is plausible.)

MESSAGES

- ☐ Information Content
  - o Are there reasons offered?
  - o Is there evidence set out?
  - o Are feelings/or emotions expressed or appealed to?
- ☐ Meaning Content

- Is the purpose or significance literally declared and/or defined? (Denotations)
- Are there suggested or implied meanings in addition to those explicitly declared? (Connotations)

- Process step 1: Interrogation: What questions should be asked?
- Process step 2: Identification: Can meaning be separated from information?
- Process step 3: Interpretation: What does it mean?
- Issues: Has adequate account been taken of . . .
  - Background (of arguer and of receiver)?
  - Contexts (both broad and local)?

PERSUASIVENESS

- Degree of persuasiveness (& type of argument)
  - Claim & support are *certain* (Demonstrative)?
  - Claim & support are *reasonable* (Dialectical)?
  - Claim & support are *plausible* (Contentious)?
- Persuasive elements present
  - Appeals to receiver's biases?
  - Clarity of argument?
  - Ease of comprehension of the argument?
  - Plausibility of claim and/or chain of reasoning?
  - Presentation of argument?
- Routes of Persuasion
  - Central—reliant on rational arguments & evidence?
  - Peripheral—reliant on cues such as
    - Attractiveness of arguer or something associated with the argument?
    - Fear, anger, or hate aroused by argument?
    - Heuristics (mental short cuts) engaged by argument?
    - Identification motive (desire to be like the arguer) engaged?
    - Timing of argument or some element in it fetches undue attention?

        - Visual associations offered are appealing and argument claims are viewed in that light?
- Resistance measures to consider employing:
    - Awareness of how persuasion works
    - Inoculation through exposure to weak versions of an argument
    - Rational skepticism practiced by doubting
    - Use of counter-arguments, exceptions, and/or plausible alternatives

LOGIC

- Basic form present
    - Presumptive (Informal Logic)?
    - Formal Logical (Classical Logic)?
- Informal Logic
    - Process to look for in presumptive reasoning:
        - Arguer advances a propositional claim.
        - Receiver, "for the sake of argument" accepts claim.
        - Arguer agrees to withdraw claim if new evidence indicates it is false.
        - Claim is tested.
    - Kinds—presumptive persuasive appeal to . . .
        - Analogy
        - Authority
        - Bias
        - Commitment
        - Consequences
        - Correlation (to infer causality)
        - Example
        - Majority opinion (or popularity)
        - Signs
        - Slippery slope
        - Verbal classification
        - Waste avoidance
- Formal Logic (Classical Logic)
    - Two forms of classical logic:

    - Inductive (from particulars to general principle)
    - Deductive (from general principle to particulars)
  - Process to look for in formal logical reasoning:
    - Arguer presents premises assumed to be true.
    - Receiver accepts or rejects premises.
    - Arguer's claim (conclusion) based on premises. (This is the argument's chain of reasoning.)
    - Receiver accepts or rejects claim (conclusion) based on whether it necessarily follows from the premises. This is a judgment of the validity, or soundness of the reasoning.)
  - Classical form of a syllogism (which may help in discerning the structure of an argument even if not presented in syllogistic form)
    - Major premise (general statement assumed true)
    - Minor premise (particular instance of a general case stated in the major premise)
    - Conclusion/Claim (inference drawn from the relationship of major and minor premise)
  - Logic Game process
    - Identify claim (conclusion): *What* is asserted?
    - Identify reasons/evidence offered in support: *Why* is the claim asserted?
    - Identify connection between claim and support: *How* are the w*hy* and the *what* chained together?
    - Assess the argument: Does the *why* (reasons/evidence) adequately support the *what* (claim) so that the argument is valid?

EMOTION

- ☐ What is the reflective feeling and/or emotion aroused by the argument?
- ☐ Can any underlying reflexive feeling be identified?
- ☐ What judgment do these feelings indicate?
- ☐ What personal biases are implicated in the feeling/emotional response to the argument?

Personal Notes

(A place to add new ideas and information on arguments.)

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About the Author

Dr. G. G. Bolich, a scholar and long time university educator, holds degrees in philosophy, psychology, and religion. He is the author of volumes in all of these fields. His current work specializes in epistemology and the history of knowledge.

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